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The STATE of the CAMPUS

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MSM Alumnus

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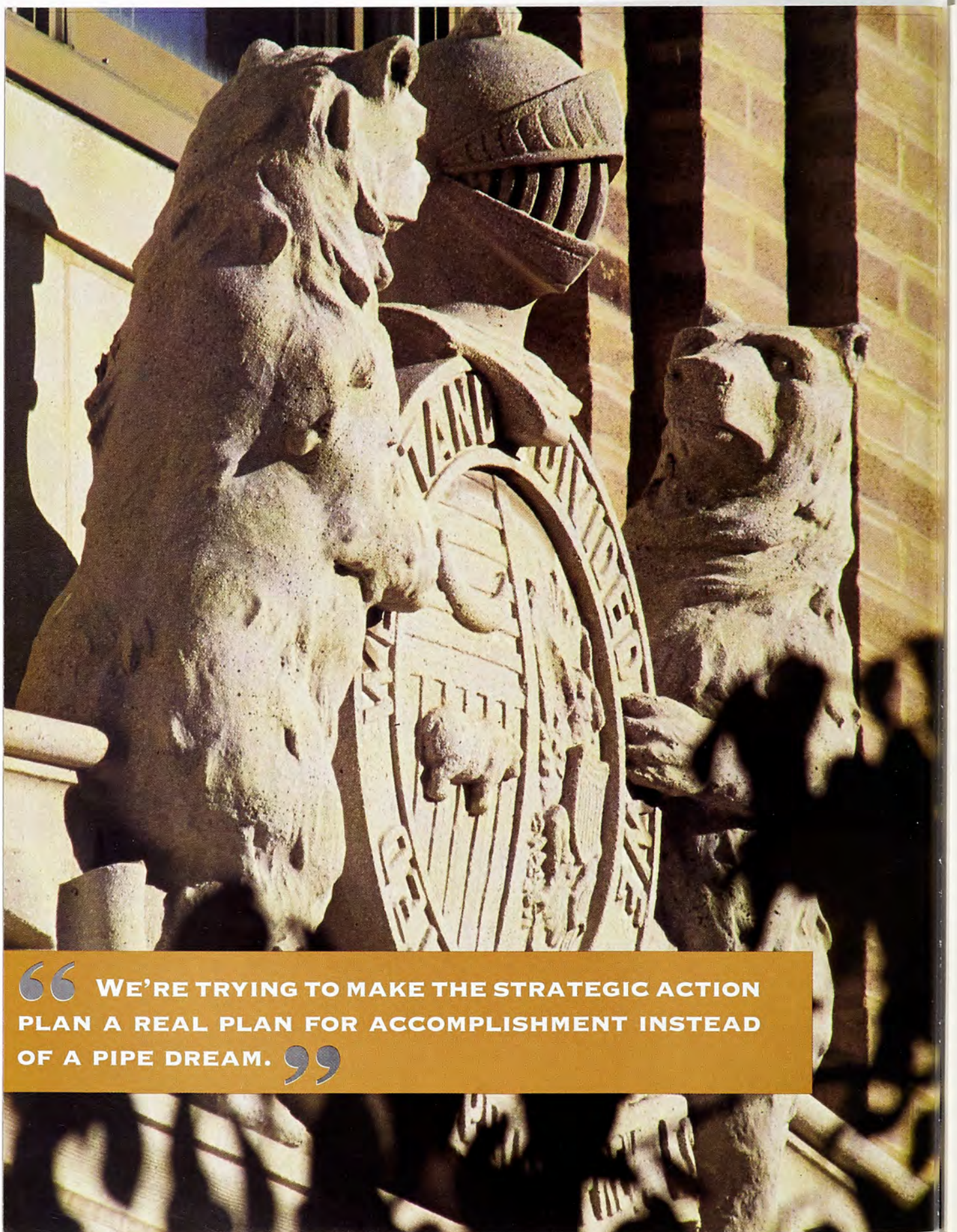


“WE’RE TRYING TO MAKE THE STRATEGIC ACTION PLAN A REAL PLAN FOR ACCOMPLISHMENT INSTEAD OF A PIPE DREAM.”

ACTION!

UMR'S PLANS ARE BASED ON CONTINUOUS IMPROVEMENT

There's just no getting around it. In academia, plans are as much a part of the culture as caps and gowns at graduation. There are enrollment plans, budget plans, student leadership plans ... the list is seemingly endless.

Not that plans are inherently bad. When properly constructed, a plan can be a thing of beauty: concise and direct, a road map of where an institution wants to go and how it aims to get there.

But many plans are unwieldy, too full of lofty ideas. These are the tomes you see gathering dust upon the office bookshelf of many a campus administrator.

UMR's Strategic Action Plan is different. It reflects Chancellor **John T. Park**'s preference for a more down-to-earth approach. He doesn't want to hear about your grandiose schemes to achieve excellence; he wants to know how you're going to do it.

"So often, universities set these grand and glorious goals—and they're so far away, there's not the motivation to achieve them," Park says. "What we are trying to do is focus on what we can accomplish over the year—knowing that if we do that, five years down the line, that goal will be accomplished."

That philosophy forms the basis for UMR's Strategic Action Plan—a yearly document that sets forth realistic and attainable goals. The blueprint, Park says, is challenging but not impractical.

"You want a plan to have stretch goals, but on the other hand you don't want to set goals that are impossible," Park says. "We're trying to make the strategic action plan a real plan for accomplishment instead of a pipe dream."

Park describes the annual blueprint as a "continuous improvement plan"—a phrase familiar to those in total quality management circles—with some modifications.

THE PROCESS

Planning begins in the spring, when each unit director answers the same question: What can you accomplish next year that will contribute to UMR's mission? That mission is "educating leaders in engineering and science." To accomplish it, the campus has set forth 12 broad-based goals called "initiatives" (see "The strategic plan at a glance," page 6).

The directors or managers meet with others in their unit, gather ideas, and formulate annual goals—called "action items"—that will fit into the bigger picture. Those goals then go to the next level of administrators—typically, the deans and vice chancellors—who then bring the information to the chancellor.

In June of every year, Park and his staff get away from campus for three days to pow-wow on these proposed actions. Park calls this "reality therapy," because the administrators must decide which proposed projects truly meet the criteria to stay in the plan.

And those criteria keep the plan based in reality. Action items must:

- Be completed in a year's time.
- Be completed with existing funds and staffing.
- Advance one or more of the 12 initiatives.
- Have clear-cut definitions for measuring success.

The group returns to campus with a rough version of a plan, then sends that version back to the units for further review. The unit directors and managers then deliver their comments to the chancellor's staff group, which in turn crafts the final version of the annual plan.

HOW WE'RE DOING

And how are we doing? The record, after two years of strategic planning, is pretty good.

Most of the first strategic action plan's 101 action items have been completed. They include making the campus computer network more accessible to students and faculty (see story on page 8), initiating the UMR Excel group-learning program (see story on page 6) and completing the telephone registration process for students. Last year, the campus accomplished even more, including the creation of a group to study UMR's curriculum (see story on page 9), development of a student leadership program, and several cosmetic improvements, including the start of construction of a new student recreation center and the Campus Support Facility.

This year's plan, still in draft form, contains more exciting and ambitious projects. It includes strategies for new teaching experiments and new research ventures, a proposal for a new degree program, development of a money-saving energy management program on campus, and about 100 other items. How the campus will fare on these projects remains to be seen, but rest assured: the campus will continue to strive toward excellence in all areas.

As Park puts it: "With this plan, I don't think we're short on work this year." ■

By Andrew Careaga
Photos by Dan Seifert
Stone House Photography

THE STRATEGIC PLAN AT A GLANCE

UMR's strategic action plan is built on UMR's traditions of excellence. It is composed of:

The mission: "Educating leaders in engineering and science." This is the reason UMR exists.

The vision: UMR has a unique environment—more akin to a small, private liberal arts college than a state land-grant university. UMR is rooted and grounded in the traditions that made MSM an excellent university in the past—and keeps UMR at the forefront of technological education today.

The initiatives: Think of the campus mission as the keystone of an arch, and you've got a good idea of the role of the initiatives. They're the support stones—the imposts, springers and voussoirs—that hold the keystone in place. There are 12 in all:

- Maintain excellent academic programs
- Maintain high-quality teaching programs
- Recruit and retain the very best faculty
- Strengthen nationally acclaimed research programs
- Develop top-notch graduate programs
- Recruit the best students—those who will benefit most from UMR's unique environment and high standards
- Foster a supportive campus environment
- Provide safe and effective laboratories
- Provide excellent physical facilities that support the campus programs and provide an attractive setting for study and work
- Provide campus services that contribute to a productive, pleasant and supportive environment
- Provide an exceptionally effective campus administration
- Obtain the financial support needed to accomplish UMR's objectives

The action items: These are the gritty details of the plan, the piers of the arch that support the campus initiatives and mission. Each year, the campus plan sets forth about 100 of these quality improvement items to be completed during that year with existing funds and people.

Genera

FRESHMEN TAKE A NEW

APPR

For Rolla, Excel UMR is about as big a break with tradition as was the arrival of lights in Chicago's Wrigley Field. And much like that first night game at Wrigley, Excel can be disarming for those who remember academic life as long lectures, highly structured labs and professors who maintained strict control.

In Excel workshops, freshmen lean back in their chairs or sit on tables, munch on pizzas, drink soda and listen to music. It's hard to believe they're actually learning something, too.

They're learning how to learn amid the apparent chaos of the Excel workshops.

These group-learning workshops began two years ago as an experiment with just a few dozen students. Since then, Excel UMR has blossomed into one of the more popular elements of the freshman experience at Rolla. This fall, half the entering freshman are in the program. Excel alumni say even more freshmen should sign up.

"I'd like to see every freshman get involved in Excel," says **Sandy Anderson**, a senior metallurgical engineering major who has been through the program. The once-shy Anderson now serves as a facilitator for one of the Excel groups, and she credits the program with helping her socially as well as academically.

"It took a lot for me to meet people" in her pre-Excel days, says Anderson. "Excel brought me together with seven people who I normally wouldn't have been around. It helped me develop new friendships and also helped my grades."

Anderson is no exception. Students who volunteer for the program are more likely to stay in school—and make better grades—than those who don't.

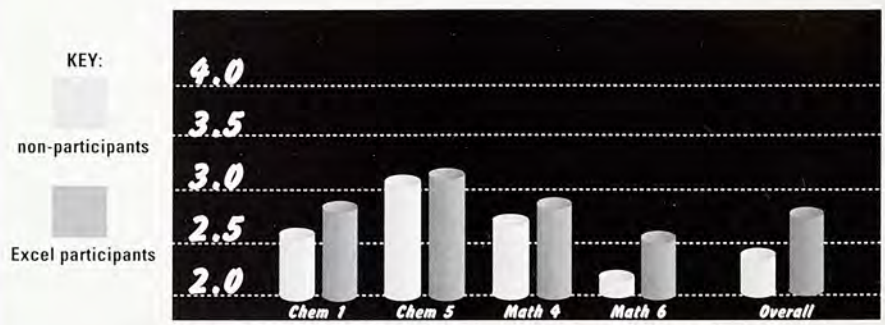
At the core of Excel UMR are student-run workshops that correlate to the make- or-break courses of calculus, chemistry and physics, says **John D. Fulton**, dean of UMR's College of Arts and Sciences, which sponsors the program. Students work in groups to solve worksheet problems developed by student facilitators. The facilitators, in turn, are under the supervision of faculty members who teach the entry-level courses.

But a workshop is not a study hall, and the workshop facilitator—an upperclassman who has already taken the course that correlates with the workshop—is not a tutor.

"Unlike a tutor, facilitators answer a question with a question," says **Lance Haynes**, an associate professor of speech and media studies who oversees the program. "It is grueling for facilitators to not answer a question, but Excel works by getting students to teach each other. Excel is enriching in the sense that students teach each other and they learn the concepts in a much more powerful and thorough way.

"It is also fun," Haynes says. "Students learn that chemistry can be a gas and math can be a hoot."

The program is modeled after successful



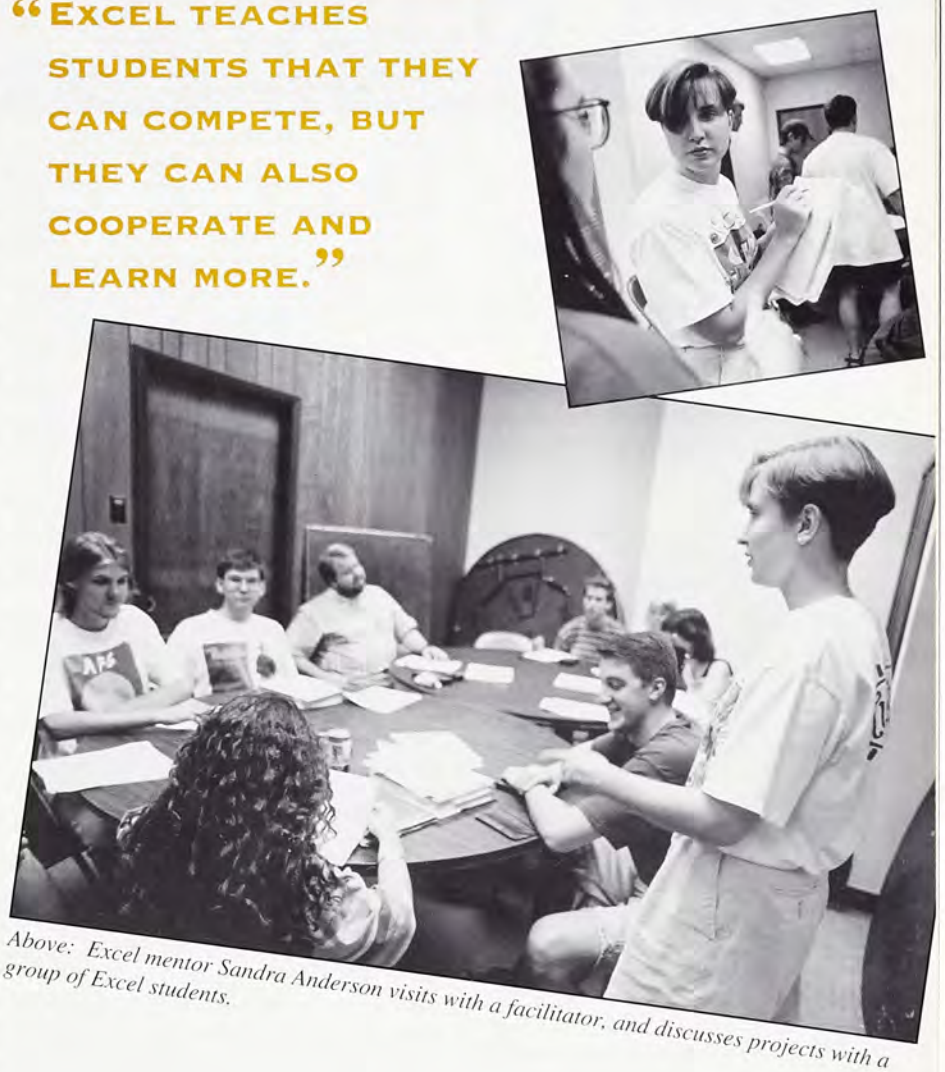
Comparison of Excel participants and non-participants in four freshman-level courses, by GPA, fall semester 1993.

tion eXcel

APPROACH TO LEARNING

By Marianne Ward

> "EXCEL TEACHES STUDENTS THAT THEY CAN COMPETE, BUT THEY CAN ALSO COOPERATE AND LEARN MORE."



Above: Excel mentor Sandra Anderson visits with a facilitator, and discusses projects with a group of Excel students.

group-study workshops designed to improve retention rates for minority students. Unlike those programs, however, Excel UMR is open to all UMR students.

The additional weekly time commitment—three hours for each course that offers an Excel workshop—doesn't deter students from encouraging others to take part in the program. "By taking a more active role in the process, I learned so much more," says **Bryan Niehaus**, a senior mechanical engineering major and former student facilitator. "I think it would be beneficial if there were workshops for upper-level courses."

The workshops' less formal environment fosters a more collaborative learning style among students. "Students change from having an extremely competitive attitude to embracing a cooperative spirit," says Haynes. "Excel teaches students that they can compete, but they can also cooperate and learn more."

Students may work together to make maps, measure the heights of buildings or play hopscotch over chemistry formulas. Such projects feature two types of problems—those that a student can do on his own, and those that require students to collaborate. The second type fosters teamwork and helps each student to understand how to arrive at an answer.

One result of the program has been an increase in the number of first-year students returning to UMR. "Our retention rates are rising" thanks to Excel, Haynes says. The freshman retention rate for the fall of 1992, the first semester of Excel, was 83 percent, up 2 percent from 1991.

Excel has had a positive effect on student grade-point averages as well as retention. Last fall, the 358 Excel participants earned an average grade-point average of 2.74 in the four courses for which workshops were offered. The 866 students in those classes who did not take part in Excel had an average GPA of 2.45. And last spring, the grade-point averages of Excel students were nearly four-tenths higher in four of the six courses for which Excel was offered.

The program's long-term merits will surface as alumni enter the work force. "Very soon we will be able to measure the true success of the program," Haynes says. "I think we will see a much higher percentage of graduates who will move into management positions more quickly" because of the team-building and communications skills they honed through Excel.

The learning project also is providing a research opportunity for UMR faculty. Cameras and microphones record Excel workshop activities so that UMR faculty can study student behavior in an effort to determine the most desirable small-group traits. **Catherine Riordan**, director of UMR's management systems program and an expert in organizational psychology, is heading the study. Assisting in the research are Haynes; **Diane Stutts**, a counselor in UMR's Counseling and Career Development Office; **Matt Insall**, an assistant professor of mathematics; and **Angela M. Escalera**, a Ph.D. candidate in engineering management.

Net assets

CAMPUS NETWORK MAKES FOR VERY PERSONAL COMPUTING

Campus computing, by the numbers. UMR is getting wired. The campus is approaching 2,000 network connections. Currently available are roughly 100 networked printers, 80 dial-up ports and almost 1,800 computers.

You'd expect a campus that bills itself as Missouri's Technological University to have an edge when it comes to computers. But not long ago UMR was scrambling to make more computers and networking capability available to students and faculty.

Five years ago, only half of the faculty's PCs were connected to the campus computer network. Today, practically every faculty member can get on-line.

Efforts to link students to the network have been successful as well. Five years ago, UMR had a networked computer for every 14 students. Today, UMR's 30-some computer learning centers have 600 computers—surpassing the campus goal, realized in 1992, of a PC for every 10 students. "There aren't many universities that have that ratio," says **David W. Dearth**, CSci'68, director of computing services at UMR. A ratio of one PC per every 20 to 30 students is the norm at most colleges and universities, Dearth says.

But being a UMR student these days requires a high degree of computer literacy. More and more courses require students to use electronic mail, engineering software, and word processing and spreadsheet programs. It's not unusual for UMR faculty to distribute or collect assignments via e-mail. "I rarely hand out hard copies of anything in class anymore," says **Linda M. Manning**, an assistant professor of economics and one of the pioneers of "electronic classes" at UMR. For Manning's courses, students can find everything they need—from syllabi and course schedules to their classmates' e-mail addresses—on the campus Gopher server. (Gopher is a popular electronic vehicle that can be used to easily cruise the information highway.) Gopher also houses similar data for other economics classes, as well as for classes in physics, engineering management, management systems and, of course, computer science.

To do well in such classes, students need at least a rudimentary knowledge of computer networks. Not all students enter UMR equipped with the knowledge they need to navigate the network. Manning used to teach the basics herself. Nowadays, she sends her classes to short courses taught by the UMR computing services staff.

This fall, Manning and others will get some help from basic engineering lecturers **Mary Ann Koen**, EMgt'80, and **Thomas Bryson**, ME'64. Koen and Bryson have modified the Engineering Graphics course, primarily a freshman-level course, to teach students about the campus network along with computer-aided drafting and design.

"We want them to be aware of the tools that are available, because they'll be using them in later courses," says Koen. Ninety-five percent of the 400 students in Engineering Graphics this fall are freshmen, she adds, and not all of them will be proficient with the network. "We're trying to make sure that all the students will have an equal knowledge base," she says.

Toward that end, the Engineering Graphics faculty are devoting the first eight weeks of this semester to instruction on using the campus network, DOS and Microsoft Windows programs, WordPerfect and Quattro Pro software packages, and e-mail, Gopher and an interactive Internet server called Mosaic. This will be followed by eight weeks of Auto-CAD instruction and two weeks of Math-CAD instruction. The course will culminate during the final week with a project that will integrate the various programs. Faculty will send the class data and instructions via e-mail, and students will prepare a report that requires them to use MathCAD to solve equations, Auto-CAD to create two-dimensional drawings, WordPerfect to write the narrative, and Quattro Pro to create spreadsheets.

With the campus network construction project now virtually complete, Dearth and his computing services staff are now looking at ways to make the network more user-friendly. "People want more software and newer software," Dearth says. "More people want Windows and software that works in the Windows environment."

Dearth and company are also upgrading the six "numerically intensive" Hewlett-Packard 9000-735 workstations housed in the UMR Computer Center. The workstations will have more memory and processing power, helping faculty members and students who do intensive computational research. They're also moving away from mainframe computing in favor of desktop computers connected via the campus network. This project involves upgrading the Unix facilities to include three Hewlett-Packard 9000-735s—two for interactive computing and one for batch work. These systems will ensure that every student gets an e-mail address, file storage, Internet access and a variety of other computing applications.

Incorporating computers in the coursework makes classes more interesting for most UMR students. "At a school like this, if students are able to use technology, it increases their interest in the subject," says Manning. "They get some hands-on experience." They also learn "skills that transfer to other courses and to the working world," she says.

Once students discover the vast resources on the Internet, however, they can get a little carried away. Last spring, for instance, a student doing research for one of Manning's classes browsed the Internet in search of information on the North American Free Trade Agreement. He discovered the entire NAFTA document, courtesy of the federal government. Thrilled with this discovery, he hit the computer's "print" command, thus getting a hard copy of the entire NAFTA document ... all 800 pages. ■

By Andrew Careaga

Setting ideas in motion

To the uninitiated, Engineering Dynamics may *sound* exciting. But the course has never been a favorite among UMR engineering undergraduates.

"Not many of the students look forward to taking this course because it's so difficult," says **Ralph E. Flori Jr.**, PetE'79, an assistant professor of basic engineering who teaches the course.

How the course was taught in the past may have something to do with it. Engineering Dynamics deals with the study of motion, but static drawings on a chalkboard or in a textbook don't convey those concepts very well. So in an effort to help students better understand the subject, and jazz up the course with some colorful visuals, Flori teamed with **Robert L. Davis**, former dean of the School of Engineering, and two other basic engineering faculty members—**David B. Oglesby** and **Mary Ann Koen**, EMgt'80,—to create some educational software, "BEST Dynamics" (or, basic engineering software for teaching dynamics). The interactive system consists of a series of animated modules designed to help students grasp such concepts as projectile motion (a cannon shoots its ammunition at the angle and velocity a student selects), relative motion (in which students view the motion of two airplanes from various perspectives) and impact (in which students determine the speed and direction of billiard balls after impact).

Though still too early to tell how BEST Dynamics is affecting learning—the system has been in use for only a year—Flori and his colleagues are encouraged by the preliminary results.

The BEST Dynamics experiment is just one of many novel teaching practices occurring at UMR these days. New approaches to traditional courses are flourishing under the Strategic Action Plan, which has made creative teaching a priority. "We want to look at the most innovative teaching practices that are being used on other campuses, and then we want to improve on them," says Chancellor **John T. Park**. "In many cases," he adds, "the work our faculty members are doing is just as innovative—if not more so—as what we're finding on other campuses."

Spearheading this move to improve UMR's educational product is the Curriculum Task Force, a group appointed by the chancellor in the spring of 1993. Headed by **William H. Tranter**, Schlumberger Professor of electrical engineering, and composed of representatives from all academic departments on campus, the task force is studying ways to improve UMR's curricula and teaching programs. This summer, one of the task force subcommittees—through funding from the chancellor, the School of Engineering and College of Arts and Sciences—awarded grants to support faculty members who are developing innovative teaching tools or methods. That panel, chaired by electrical engineering Professor **Thomas J. Herrick**, CE'58, received 50 proposals for the 10 available grants. ■

INNOVATIVE TEACHING...INNOVATIVE TEACHERS

Experiments abound in UMR's classrooms and labs this fall. Ten faculty members are putting new teaching ideas to the test this fall, thanks to a campus program designed to support novel teaching methods.

Five grants support faculty members in their efforts to find outside funding sources for their teaching methods. "The first step to getting federal funding for a project is to have seed funding from the campus," says Tranter. "The competition is fierce" for federal grants, Tranter notes, so proposals that have campus support have a leg up on those that don't.

The other five grants support faculty members who bring innovations to existing courses.

Each of the grants is equivalent to a month's salary for the faculty member. In all, 50 faculty members submitted proposals for funding—a sign that instructors are thinking innovatively. "There were no bad proposals," says Herrick. "We would have been comfortable supporting all of the projects."

Receiving funds to develop proposals for external funding were:

- **Ralph E. Flori** (see story at top of page) to seek funding for "BEST Dynamics," a computerized multimedia teaching program being used in Engineering Dynamics courses.
- **Matt Insall**, assistant professor of mathematics, to seek funding for a "team-designed" curriculum that would help students better understand how what they learn in one class is relevant in others.
- **Frank Liou**, associate professor of ME/AE, to seek funding for an interactive design computer program to be used in a mechanical engineering course. Liou and co-investigators **Sally Prakash**, EM'85, a lecturer in ME/AE, and Bruce M. McMillin, an associate professor of computer science, received $90,000 from the National Science Foundation and $20,000 from the UMR Manufacturing Research and Training Center to support their project.
- **J. Keith Nisbett**, assistant professor of ME/AE, to seek funding to develop a computer-aided instruction package for a course on introductory mechanisms. The "kinematically intelligent blackboard" developed by Nisbett and ME professor **Clark R. Barker**, was featured in the February 1993 issue of *MSM Alumnus* ("Blackboards go back to the future").
- **Hardy J. Pottinger**, EE'66, associate professor of electrical engineering, to seek funds to integrate VHSIC (very high speed integrated circuit) hardware into the computer engineering curriculum.

Funding for projects to improve existing courses was awarded to:

- **Gary L. Bertrand**, professor of chemistry, to develop computerized tutorials for General Chemistry students participating in the UMR Excel program (see related story on page 6).
- **V.A. Samaranayake**, associate professor of mathematics and statistics, and **Michael Laviolette**, assistant professor of mathematics and statistics, to develop new instructional strategies and computer software for teaching statistics.
- **Don M. Sparlin**, professor of physics, to develop software support for the physics instruction center.
- **Daniel S. Stutts**, assistant professor of mechanical and aerospace engineering and engineering mechanics, to develop a device to be used in Stutts' Automatic Control of Mechanical Systems course. Students will be able to design simple circuits to control the device.
- **Robert M. Ybarra**, lecturer in chemical engineering, to develop an electronic manual for chemical engineering laboratory courses. The interactive manuals are designed to illustrate concepts of distillation, adsorption and other processes, and also will give students step-by-step instructions, via text and photos, for using the lab equipment.

Smells like team

Photo by Kathy Matthews

Having UMR on his resume certainly didn't hurt ***Gary Pinkley****, ME'94, in his job search, but it was his involvement with UMR's Solar Car Team that helped him land his dream job at General Motors.*

"I got my job with GM specifically because of my involvement in the Solar Car Team," says Pinkley. At Rolla, Pinkley was part of a team of students that designed and built UMR's first solar-powered car, *Sol Survivor*. He now works on automatic transmission designs for GM in Ypsilanti, Mich.

Pinkley was one of the drivers of *Sol Survivor* during Sunrayce '93, the cross-country race of sun-powered vehicles. But he also put in long hours and plenty of sweat equity to get *Sol Survivor* in shape for the contest, and he credits that experience with helping him land the GM job.

"The whole experience was invaluable," Pinkley says. "I learned more about working with people and engineering on that project than in all my classes combined."

Team spirit seems to be a feature companies are looking for in today's college graduates. From automobiles to electronics, manufacturers seek engineers and others who know how to work in groups, and teamwork is at the heart of the total quality management philosophy that many businesses are extolling these days.

"The firms all say that teamwork is the most important" skill for new graduates to possess, says **Douglas R. Carroll**, PhD EM'91, an assistant professor of basic engineering at UMR and a faculty adviser to the Solar Car Team. Solar Car Team members "get hands-on experience," Carroll says, and that involvement "prepares them to manage, which is a big part of being a successful engineer."

"Industry looks for design experience and leadership skills," adds **James A. Drallmeier**, assistant professor of ME/AE and faculty adviser to UMR's SAE Formula Car Team. Such team projects give students "hands-on and design experience that other students don't get," Drallmeier says.

"In a business," Carroll adds, "managers are responsible for doing all the planning required to do something—such as what (components) to order or where to order. These are things you just don't learn in engineering classes."

UMR is trying to instill a teamwork attitude in students—both in the classroom and out of it. Some teams build and design cars of diverse shapes and sizes—including a new solar car and a miniature formula racer for future national competitions, as well as remote-control vehicles for a class project. Others race against time to construct steel bridges, or try to build seaworthy canoes out of concrete. Students in aerospace engineering work together to create remote-control airplanes, while mining engineering students gain a new appreciation of mining technology when they use their brawn to muck ore the old-fashioned way: by hand.

Such team activities are invaluable in preparing students for the working world, where cooperative ventures are the norm.

"We haven't done enough of that," says **Roger A. LaBoube**, CE'70, associate professor of civil engineering and faculty adviser to the civil engineering department's Concrete Canoe Team and Steel Bridge Team. "Traditionally, engineers have been taught to be on their own, but they should be able to relate and communicate with co-workers in industry."

Team approaches also help students learn to think more globally, says Carroll. They "look more at the whole problem, communicate with the other members of the team and have a long-term commitment to succeed." In the instance of the Solar Car Team, students not only must design and build a vehicle; they also must write proposals, raise funds and publicize their efforts. By working as a team, students can break the enormous task down to smaller, more manageable jobs.

"Team projects are simply too big for one person to handle," Carroll says. "Team members have to coordinate and work together, and they have to have the responsibility to get the job done." Adds Drallmeier: "Students do all the work themselves from start to finish. Even though their efforts may not come out right the first time, they learn from their mistakes and that is a very important part of teamwork."

The same holds true for classwork. "Our senior design courses are now all based on team effort," says LaBoube. "The student team members have to do everything. They arrange, plan, design, fabricate, build and enter the contests. They virtually execute the project themselves."

It isn't just the educators who are high on the team approach to education on campus. Students who have taken part in team projects also think highly of the programs. "When people set aside their own egos and work together, it is amazing what can be accomplished," says **Adam Brown**, CE'93, a graduate student in civil engineering at UMR and a former chair of UMR's Steel Bridge Team, which finished third in the nation in the 1993 contest. "Involvement in a team effort teaches a person to have humility, appreciation and respect for others. In that context, it makes no difference whether it is a bridge-building team or a basketball team."

Teamwork also brings synergy to a project, because the diversity of its members results in a diversity of ideas, says **Kurt Higgins**, a senior in civil engineering and co-chair of last year's Concrete Canoe Team. "We took 20 different ideas from 20 different team members and came up with the one idea that worked," he says. "As a team you utilize everyone's resources and you learn to manage your time more effectively."

One advantage to projects like the Solar Car Team is that the efforts transcend disciplinary lines. This means that electrical engineering students will rub elbows with students from mechanical and aerospace engineering or engineering management. Such an experience prepares students for the corporate world, where engineers working on, say, product development may spend more time with accountants and

Continued on page 10

By Dick Hatfield

spirit

Students look over the SAE car on display on campus. Opposite: Pinkley in the driver's seat of Sol Survivor *during Sunrayce '93.*

Team spirit, continued

marketing specialists than with other engineers.

The structure of an organization like the Solar Car Team allows for continuity of leadership, says **Donald B. Higginbotham**, a lecturer in engineering management and principal investigator of the UMR Solar Car Project. "The organization's plan for succession allows a volunteer student to follow and then develop into a group leader across a broad spectrum of functional activities," Higginbotham says.

Perhaps the biggest payoff of team efforts, at least from the students' perspective, comes during the career search. Many of the former student members of the Solar Car Team have gone on to excellent jobs. They include **Jeff Shapiro**, Phys'93, who now works for the U.S. Department of Energy and will be a spokesperson for Sunrayce '95; **Andrea Budnik**, EMgt'94, who now works for GM; **Paul Stallman**, ME'93, who works for Ford; **Elizabeth Broyles**, EMgt'94, and **Tom Sullivan**, EE'93, who both work for WilTel; and **Aaron Laws**, AE'94, who now works for Boeing.

Members and former team captains of the Formula Car Team also have gone on to good jobs. **Kyle Tucker**, ME'93, is now an engineer with GM at its Milford Proving Grounds. **Mark Stielow**, ME'91, now works for Summit Racing, and **Fred Thomas**, ME'91, is a product design engineer for Ford.

Aaron Rutledge, upper right, explains the solar car project to other students during an informational meeting to recruit new students for the project. In front of him is the mold that will be used for the top of this year's car.

A CAMPUS THAT TEAMS WITH ACTIVITY

Students looking for a team project to join at UMR don't have to look very far. Here are a few of the team-oriented projects offered on campus:

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Fun in the sun. The UMR Solar Car Team is a cross-disciplinary project that gives students hands-on education and research experience. The team is designing a new solar-powered car to run in Sunrayce '95.

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Real muckraking. Students interested in a little muckraking may want to join the UMR Mucking Team. Each year, the men's and women's teams compete against teams from other mining schools in a national mining contest of old-fashioned mining prowess. No newfangled technology allowed; teams use only old-fashioned methods and hand-held tools. Last spring, the UMR men's team struck gold, winning first place in the overall competition at the National Intercollegiate Mining Competition held in March in Nevada. As a reward, UMR hosts this national event next spring.

★★★★★

Whatever floats your boat. Civil engineering students discover that the theories they learn in the classroom really do hold water when they build concrete canoes. Each spring, the UMR Concrete Canoe Team competes in a regional contest in which teams from throughout the Midwest attempt to navigate concrete canoes across a lake. The UMR team finished in fourth place overall at last April's contest, held at Little Prairie Lake east of Rolla. (Pictured on back cover.)

▼▼▼▼▼

Not-so-heavy metal. The objective of UMR's Steel Bridge Team is to design a sturdy-yet-lightweight, 20-foot-long bridge that can withstand weights of up to 2,500 pounds. Some assembly is required; in regional and national competitions, the team races the clock to see how fast it can build the structure. The team last tested its mettle in the May 1993 national competition, held on the campus of Southern College of Technology in Marietta, Ga. UMR fared well, finishing the contest in third place.

■■■■■

Go Speed Racer, go! Every other year, UMR's SAE Formula Race Car Team, made up of mechanical and aerospace engineering students, builds a formula-style race car that competes in a national collegiate competition sponsored by the Society of Automotive Engineers. In the last contest, held in May 1993 at the Chrysler Corp. Tech Center in Auburn Hills, Mich., UMR's car won third place in the overall design competition and third place in the static (non-moving) event. The car had some problems on the road, however, and finished 18th in the race.

◆◆◆◆◆

Miners to the rescue! The UMR Mine Rescue Team is the only such collegiate team in the nation, so students must compete with seasoned veterans from the mining industry. The UMR team's first event of the year is a mine rescue contest Oct. 13 and 14 at UMR's Experimental Mine.

UMR Bookstore

1. MSM Alumni Hat - Black/Gold $11.50
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UMR Bookstore

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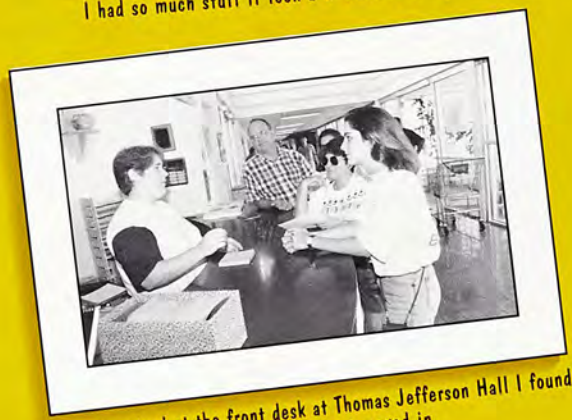
A FROSH

When Jennifer Campbell started college at UM-Rolla this year, she was one of 193 women in a freshman class of 818. While many alumni remember Rolla as an "all-male" university, the viewpoint is definitely changing. Now women make up nearly one-fourth of the student body and are expected to increase in numbers each year as more and more women find engineering and science an exciting career.

Jennifer is the daughter of Robert Campbell, CE'71, '83; so she had some insights into being a "Miner" before she arrived on campus. She is a graduate of St. Teresa's Academy in Kansas City and is an "undecided" engineering major, although she is interested in civil, geological and environmental engineering. Here, in her own words, we follow her through her first few days of school.

I had so much stuff it took a U-Haul to bring it to Rolla.

The first load of things to my room consisted of a bag of pictures and a pillow I bought in Sedalia because I accidently left mine at home.



When I arrived at the front desk at Thomas Jefferson Hall I found out a list of things I had to do to get moved in.

This is a last family picture before I was left at my new home. I was glad my folks left quickly because I didn't want to cry.

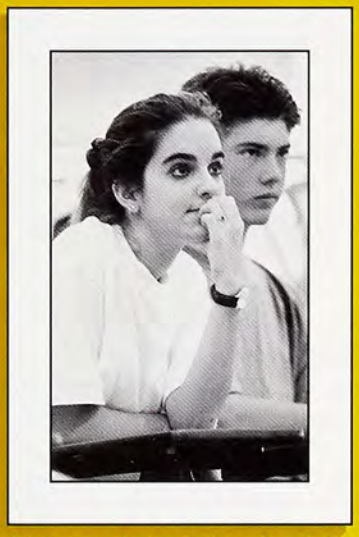
My sister and I are putting together my loft bed. We built the framework at home then brought it with us. It worked great except it was a little too tall. I only have about a one-foot clearance between the mattress and the ceiling, and I've already hit my head on the ceiling when the alarm goes off in the morning. Dad is going to fix it next time he comes to see me.

This is mom and my sister at the bookstore. Buying books was easy because if you're a freshman and registered early, all you had to do was pick up a bag with all your books inside. The bookstore has everything ready for you.

Photos by Dan Seifert/Stone House Photography and Roberta Brown Morgan '87

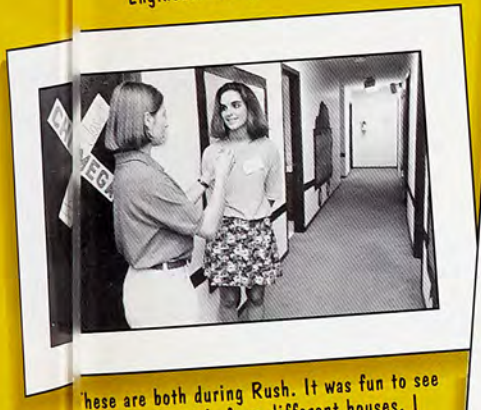
PERSPECTIVE

On the way to one of my first classes I stopped in the hallway of the Civil Engineering building to look for my Dad's picture. Dad was inducted into the Academy of Civil Engineers this year.



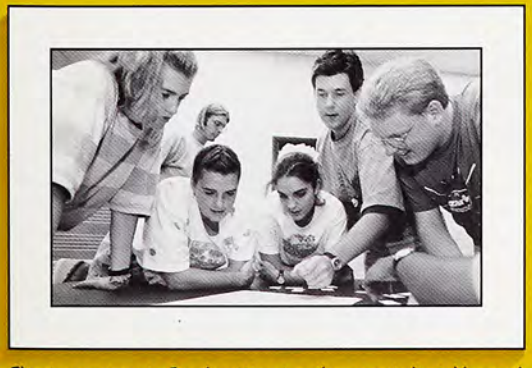
This is in my first math class. I wanted to meet the people sitting next to me, but I didn't know what to say or even if they wanted to meet me.

I was nervous the first day I had Chemistry 01. I didn't know what to expect from my teacher, or the class. I've never been in a class that big before.

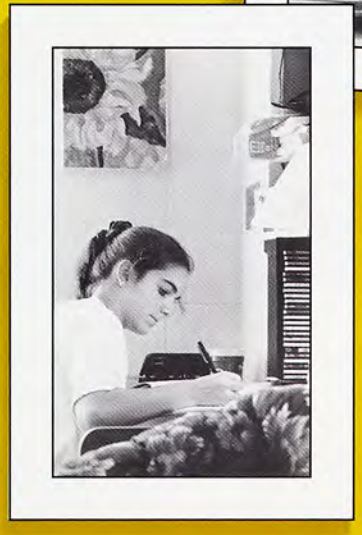


These are both during Rush. It was fun to see and meet the girls from different houses. I decided to pledge Zeta Tau Alpha.

This was my first meal at the TJ cafeteria. I was really scared to try the food.



This is my group in Excel putting together a periodic table puzzle. Excel is a lot of fun and a great way to learn.



From the very first day of classes I have had to study and do homework, but I try to balance it with some fun.

Good News, Bad News for UMR

On the political front, there's good news and bad news for UMR. The good news is that Missouri voters have approved a bond issue that will bring much-needed renovations to campus.

The bad news is that an initiative on the Nov. 8 ballot in Missouri could result in severe budget cuts for UMR if the initiative is approved. Here is a summary of both issues:

The Good News:

Campus renovations approved by Missouri voters

Missouri voters' approval of Amendment 4, a $250 million bond issue for prisons and universities, is good news for UMR. The $250 bond issue will provide $6.9 million for expansion and renovation of the UMR Electrical Engineering Building and $2.4 million to upgrade the heating, ventilation and air-conditioning system in Schrenk Hall.

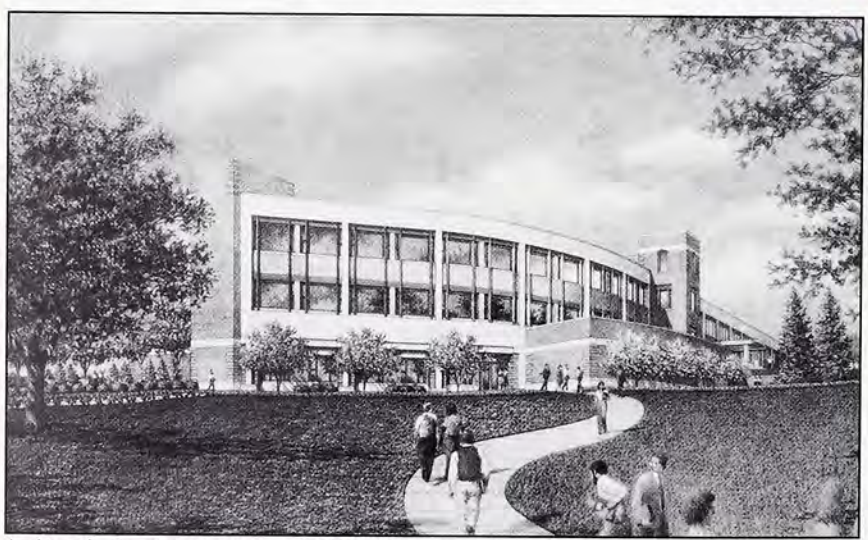
Passage of Amendment 4 was "a tremendous boost to our campus programs and an investment in Missouri's future that will be repaid many times over," UMR Chancellor **John T. Park** says.

For the Electrical Engineering Building, the campus plans to build a 36,000-square-foot addition and renovate portions of the existing structure. The $6.9 million from the bond issue will be matched by a $1 million gift from Emerson Electric Co. of St. Louis.

"The Electrical Engineering Building was designed before the advent of transistors," Park says. "Today, we're in the information age, and the current design no longer meets our students' needs."

Renovations will equip all classrooms and laboratories with multimedia instructional tools and the latest in electronic communications.

Renovations to Schrenk Hall's HVAC system will result in improved safety and bring the building into compliance with state and federal regulations. The changes also will mean better energy efficiency, Park says. ■



Architect's drawing of exterior of EE building expansion.

"The Electrical Engineering Building was designed before the advent of transistors ... the current design no longer meets our students' needs."

The Bad News:

Ballot issue could harm UMR

UMR and other Missouri colleges and universities could find themselves struggling to stay afloat if Missouri voters approve a tax limitation proposal in November.

The proposal—called Hancock II after U.S. Rep. Mel Hancock of Springfield, who spearheaded the petition drive to get the measure on the ballot—could result in a loss of between $40 million and $60 million in state funds for the four-campus University of Missouri System if the legislature distributes the cuts uniformly. If the UM System distributes its cuts uniformly the Rolla campus could lose roughly $6 million from its state budget if Hancock II passes, UMR Chancellor John T. Park says. UMR received a state appropriation of nearly $37.5 million this year, so the Hancock II initiative could result in a loss of 16 percent of that appropriation.

Hancock II would redefine procedures and limitations on the way fees and taxes are imposed at both the state government and local government levels. Other provisions of Hancock II would require tax refunds. According to an analysis of Hancock II prepared by James R. Moody, the former state budget director under Gov. John Ashcroft, passage of the proposal would require refunds of at least $516.7 million for the current fiscal year and $507.2 million for the 1995-96 fiscal year.

The UM System Board of Curators, which governs the operations of the four campuses, passed a resolution opposing Hancock II at the board's May 19 meeting in Rolla. Also at that meeting, Moody told the curators that if Hancock II passes, the University of Missouri System stands to lose approximately $45 million.

Moody prepared the report for the Committee to Protect Missouri's Future, an organization established to oppose the Hancock II petition drive.

Missouri Gov. Mel Carnahan also opposes the measure. "This is not about tax limitation," Carnahan said shortly after the ballot measure was certified. "This is about whether we have the resources to fight crime, whether we have the resources to educate our children and whether we have the resources to create jobs in Missouri."

The issue will be on the Missouri ballot in the Nov. 8 election. ■

EEC celebrates 30 years:

A generation of St. Louis engineers have earned UMR graduate degrees without ever leaving their hometown

"The center is truly a bargain to Missouri taxpayers. With the exception of buildings and parking areas, no state money is used to support this program."

More than 2,000 St. Louis-area engineers have earned UMR master's and doctoral degrees without ever leaving St. Louis, thanks to the UMR Engineering Education Center.

The EEC, now located on the University of Missouri-St. Louis campus, began offering graduate-level degrees to full-time engineers in St. Louis in 1964. At that time, the center rented office space upstairs from Westlake Pharmacy on Natural Bridge Road and held classes in Normandy Junior High School. From those modest beginnings, the program—known as the Graduate Engineering Center for the first 20 years—has garnered the support of St. Louis industry while not burdening Missouri taxpayers.

"Because there was such a need for engineers 30 years ago, industry was able to attract and encourage their engineers with bachelor's degrees to work in the daytime and pursue their graduate degrees at night" through the UMR center, says **Anton Brasunas**, the center's first director.

After several moves, the EEC located to the UMSL campus in 1969.

Although the program is based in St. Louis, "the students get the same education they would by going to Rolla," says **James Hahn**, EE'59,'77, the EEC's interim director.

Moreover, the center lets non-traditional students further their education without burdening Missouri taxpayers. "The center is truly a bargain to Missouri taxpayers," says Hahn. "With the exception of buildings and parking areas, no state money is used to support this program."

Enrollment at the center now stands at about 350 students, after peaking at more than 800 students during the late 1960s. Classes are held in the evenings or on Saturdays, and meet once each week. About two-thirds of the courses are taught by UMR faculty members. The remaining one-third are staffed by adjunct professors who are experts in their fields of engineering. ■

Other non-traditional programs

The EEC is not the only non-traditional graduate program UMR offers in Missouri. Two other programs, both linked with the Army, are giving older, full-time professionals the chance to get a master's degree.

Gateway University. In September, the first six master's degree candidates graduated from "Gateway University," a unique venture between UMR and the Army Aviation Troop Command in St. Louis. The program, which began in the fall of 1992, offers master's degrees in engineering management on-site at ATCOM.

USAES-UMR Cooperative Graduate Program. Officers at the Army Engineering School at nearby Fort Leonard Wood, Mo., can now pursue UMR master's degrees in engineering management, environmental engineering and civil engineering. The program between UMR and the Army Engineering School, called the USAES-UMR Cooperative Graduate Program, begins in November. Instrumental in expanding the program to environmental and civil engineering was Fort Leonard Wood's commander, Maj. Gen. **Joe N. Ballard**, MS EMgt'72.

Smith named interim vice chancellor for University Advancement

Neil K. Smith, UMR's vice chancellor for Administrative Services since 1983, is also serving as the campus' interim vice chancellor for University Advancement. Smith replaces former Vice Chancellor John W. Larson, who resigned to take another position in philanthropy.

"Neil possesses the organizational abilities and interpersonal skills we need in order to continue our momentum in fund-raising efforts and external relations," says Chancellor John T. Park, who appointed Smith to the position.

Smith continues to oversee the operations of Administrative Services while assuming the interim duties in University Advancement.

Smith joined UMR in 1971 as grants and contracts officer and was appointed director of institutional studies in 1974. He became director of business services in 1979, and in 1983 he was promoted to vice chancellor for the Division of Administrative Services. He earned a bachelor's degree in business administration in 1962 from the University of Notre Dame and a master's degree in business administration in 1970 from Washington University in St. Louis. ■

Success is sweet for energy program

The makers of Switzer's licorice are savoring a cut in energy costs thanks to the services of UMR's Energy Analysis and Diagnostic Center.

Leaf Inc., which makes Switzer's and other candies at its St. Louis plant, is one of 119 Missouri and Illinois firms that have asked the EADC to analyze their energy use and recommend energy-saving practices since 1989. That was the year the EADC began, and since then the center has recommended about $4 million in energy savings to the 119 firms.

Burns Hegler, professor emeritus of electrical engineering, is the center's director. He and assistant director **John W. Sheffield**, professor of mechanical and aerospace engineering, provide energy audits to companies within a 150-mile radius of Rolla through funding from the U.S. Department of Energy. Rolla's EADC is one of 30 such centers in the United States.

At Leaf's St. Louis plant, the energy audit included nine recommendations for cutting energy consumption, according to Brian Luckerman, engineering manager for the plant. Leaf improved its boiler efficiency, reduced the air pressure in compressors and installed motion sensors to control lights in conference rooms and other areas that are used sporadically.

Hegler and Sheffield hope to expand the EADC into the environmental arena, thus helping companies reduce waste as well as energy. ■

SHOCK STEADY: Materials research gets "smart"

Imagine a car that could literally bounce back from a fender-bender—or roads and bridges that can warn engineers about hidden defects. Imagine, too, skyscrapers that can go with the flow during an earthquake. It's all part of the new material world that researchers at UMR are helping to create.

At UMR's Intelligent Systems Center, engineers are combining new materials with intelligent computer systems to develop "smart structures"—materials that can adjust their physical properties to fit changes in their environments. Such materials could lead to systems that learn, repair themselves and even warn their human creators of defects in their operation.

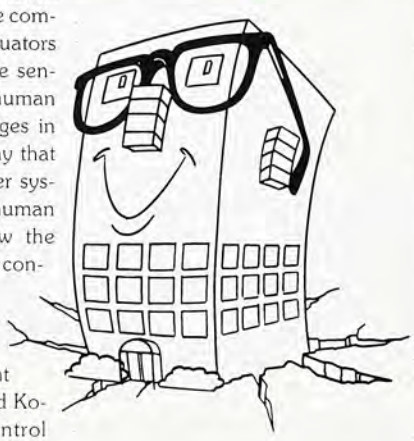
"There are so many possibilities for smart structures; we've only scratched the surface," says **Vittal S. Rao**, professor of electrical engineering and director of the ISC. The center has received roughly $1.8 million for several recent smart research projects.

Smart structures, Rao says, get their "smartness" from the computerized sensors and actuators imbedded in them. These sensors, like the nerves in human bodies, respond to changes in the environment and relay that information to a computer system. That system, like a human brain, then controls how the material reacts to external conditions.

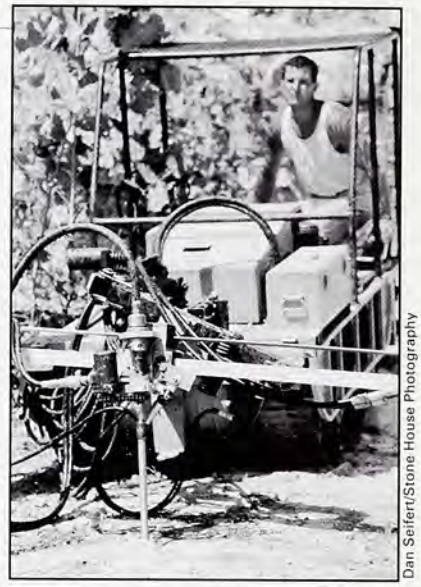
Shock and roll

One ISC project—a joint venture between U.S. and Korean researchers to control building vibrations in earthquakes—could lead to buildings that rely on extensive networks of sensors to detect motion and then react to the unpredictable rolling of an earthquake. Just as a ballerina continually returns to her center of gravity, a building wired with one of these networks would strive to maintain its sense of balance. The sensor network might carry information from seismic vibrations to a central computer, which in turn would analyze the data and program massive weights beneath the building to counterbalance the seismic movements.

The U.S.-Korean venture, funded through grants from the National Science Foundation and UMR's Manufacturing Research and Training Center (MRTC), is directed by **Franklin Cheng**, Curators' Professor of civil engineering. Assisting him are Rao and **Frank Liou**, associate professor of mechanical and aerospace engineering and engineering mechanics. ■



Mining machine is on the cutting edge



Dan Seifert/Stone House Photography

This machine's a real cut-up. It slices, dices and bisects rock, and it may prove valuable to miners who excavate in areas where explosives can't be used.

Known as the CUSP (CUt and SPlit) Miner, the machine was developed last year by students working in UMR's Rock Mechanics and Explosives Research Center. "The vehicle was built as a means of breaking rock shale with a minimum amount of energy," says **Douglas Wright**, the mining engineering graduate student who designed the vehicle.

Made from the body of a Snowcat all-terrain vehicle with tank-type treads, the CUSP Miner excavates rock by first creating a slot in the rock with a high-pressure waterjet. It then drills a hole and inserts a rock-splitting device. The rock-splitter in turn pushes a cylinder containing two small pieces of metal into the hole. Like the Jaws of Life device used to rescue people trapped inside wrecked cars, the metal pieces push apart until a crack occurs on the sides of the hole. Those pieces are then removed, and in their place goes the point of a hydraulic impact-breaker. The impact-breaker is bigger than the hole, so it causes the crack to grow until the rock is broken free.

"The CUSP Miner is a viable alternative to explosives in areas where explosives can't be used," such as heavily populated or commercialized areas, says **David Summers**, UMR Curators' Professor of mining engineering and director of the project. With this rock-splitting machine, "the area can be cleared of rock immediately, allowing the mining process to be continuous, thereby saving time and money as well as being safer for those in the area."

The machine is new, but the cut-and-split method is not. It was used by Summers in 1991 to create space for a new theater under the Gateway Arch in St. Louis. "The ground underneath the arch was an area where explosives weren't an option for the excavation of rock," Summers says. There was simply no way to set off charges of explosives without threatening the buildings in the area, as well as the Arch itself.

Wright displayed the CUSP Miner at the Society of Mining Engineers' annual convention last February in Albuquerque, N.M. "Members of the mining industry were especially interested in the Miner's drill and in the fact that it is highly maneuverable and able to easily get into small spaces," Wright says. ■

Dan Seifert/Stone House Photography

A seamless way to exchange data

Remember all that talk about the paperless office? And paperless manufacturing? For the process industries, those concepts are little more than pipe dreams—especially with government paperwork on the rise. Federal agencies continue to require manufacturers to more thoroughly document how their practices affect the environment and their employees. According to a study published by the American Institute of Chemical Engineers, a typical oil refinery will need to devote 14 full-time employees to comply with a recent OSHA policy that requires companies to document changes that occur in the refinery's day-to-day operations.

"It's going to take a tremendous administrative effort" to document such changes, says **Neil L. Book**, ChE'72, an associate professor of chemical engineering. "If all this data is managed manually, 14 people is a pretty big group to add to your payroll—especially when they aren't involved in making a product.

"All of these regulations increase the amount of data you have to store and must be able to retrieve when you or the government needs it."

Book is trying to make it easier for companies to comply with such reporting requirements. As director of the Process Data Exchange Institute, a consortium of 32 companies in the process industry, he is heading a project to develop a system that would allow companies to easily edit or retrieve descriptions of refinery and chemical processes.

The project, funded through $370,000 from the PDXI companies, will computerize reporting procedures as well as exchanges of information between companies—and even within a company, Book says.

"In a typical chemical processing plant, there is a tremendous amount of data needed to describe the design and operation of a chemical process," Book says. Much of that information is computerized, but often, because of incompatible computer programs, the information cannot be transferred via computer to a government agency or other organization. "The problem becomes, 'How does one transfer that information to different groups that use different computer programs?'"

Book and several UMR students have developed a "data model"—a protocol, agreed upon by all PDXI member companies, for how the various data should be organized for easy access. The data model is being tested and implemented by the PDXI companies.

Besides making it easier for companies to file reports with government agencies, the program will help engineers design plants and help equipment manufacturers customize parts for specific plants.

"The ultimate goal," Book says, "will be the so-called paperless manufacturing, in which the data describing the production of a product—from cradle to grave—is in a standardized electronic form that is readily accessible."

Perhaps paperless manufacturing isn't so far-fetched after all ■

1994-95 UMR Basketball Schedule

NOVEMBER		
19	CENTRAL METHODIST	(W--5:45)
	LYON COLLEGE	(M--7:45)
25-26	LADY MINER THANKSGIVING CLASSIC	(W)
	at Gannon Univ. Tournament	(M)
30	at Quincy	(M)
DECEMBER		
2-3	PEPSI-COLA SHOOTOUT	(M)
	at Indiana-Purdue-Ft. Wayne Tournament	(W)
6	LINDENWOOD	(W--5:45)
	MARYVILLE	(M--7:45)
10	WESTMINSTER	(M--3:30)
	at Quincy	(W)
17	at Lindenwood	(M)
19	DRURY	(M--7:00)
27	at Kansas State	(W)
30-31	at Grand Canyon Tournament	(W)
JANUARY		
4	MISSOURI WESTERN (DH--5:45/7:45)	
7	NORTHWEST MISSOURI (DH--1:30/3:30)	
11	at Washburn (DH)	
14	at Missouri-St. Louis (DH)	
18	PITTSBURG STATE (DH--5:45/7:45)	
21	SOUTHWEST BAPTIST (DH--5:45/7:45)	
25	at Central Missouri (DH)	
28	MISSOURI SOUTHERN (DH--5:45/7:45)	
FEBRUARY		
1	at Emporia State (DH)	
4	at Lincoln (DH)	
8	NORTHEAST MISSOURI (DH--5:45/7:45)	
11	at Northwest Missouri (DH)	
15	WASHBURN (DH--5:45/7:45)	
18	MISSOURI-ST. LOUIS (DH--5:45/7:45)	
22	at Pittsburg State (DH)	
25	at Southwest Baptist (DH)	
Feb. 27-Mar. 3	MIAA Post-Season Tournament (M)	
Feb. 28-Mar. 4	MIAA Post-Season Tournament (W)	

Your suggestions please!

The University of Missouri-Rolla has an opportunity to replace the University of Missouri System logo shown in the background. In looking for a new logo we hope to find one that truly reflects the mission and character of UMR. To be adaptable to a number of different applications (such as letterhead, publications, athletic or band uniforms, etc.) it needs to be clean and simple.

We are welcoming ideas from our alumni community. If you would like to submit a logo idea or suggestion for consideration, please send it to:

Kathy Fillmer
Publications Office
1201 State Street-Room 105
UMR
Rolla, MO 65401

Suggestions need not be in finished form, but should clearly indicated the concept to a selection team, and should be provided on a single 81/2 x 11 sheet of paper.

MINER SPORTS

Getting in shape

By John Kean

Dan Seifert/Stone House Photography

Rec center campaign will give students room to grow

So you decided to get into intramural sports this year. You signed up for volleyball, and tonight's the first game. You stroll over to the Gale Bullman Multi-Purpose Building to check out the schedule,and find your team slated for 11 p.m.—smack dab in the middle of your most productive study time.

Disgusted, you decide to vent. Nothing like shooting a few baskets to release pent-up stress. So you get to the court, and what do you find? The Miners basketball team is in practice, and intramural basketball follows it.

So much for that idea. So you call a buddy, suggest a game of racquetball. It's your lucky day; a court is open. Too bad it's too small for a competitive game.

For the typical UMR student these days, that's life. Rather than spending time on the court or in the weight room, a typical student may spend most of his precious free time trying to creatively schedule ways to gain access to the limited facilities.

Fortunately, the days of a crowded multi-purpose building are about to end.

Construction of the UMR Recreation and Intramural Center is now under way, and with that construction comes the final push of the university's drive to finance the facility. When completed next August, the $4.1 million recreation center will provide a much needed structure for intramurals and other recreational fitness activities for UMR students.

Today the multi-purpose building is the only site where students can play basketball or volleyball, or work out with weights and other exercise equipment. But that facility has become very crowded. Remember, it is also the home for UMR men's and women's basketball teams as well as other intercollegiate programs. And for many years, major elements of the campus' popular intramural program have taken place in the multi-purpose building as well. At times those games must be scheduled into the late-night hours. All that activity leaves little time or space for students who wish to play a quick game of hoops.

"Most people are aware of the need for this facility because we've had only one gym," says **Mark Mullin**, director of athletics at UMR. "With the one gym we're trying to support intercollegiate athletics, intramurals and recreational activities for those not involved in a competitive program, and it has presented an almost impossible situation."

And just how bad is it? So bad, says UMR Chancellor **John T. Park**, that "in 1992, we had more than 60 intramural volleyball teams, and some of the students were playing volleyball at midnight because of our lack of facilities."

That won't be the case with the new recreation center. When completed, the center will house an indoor suspended jogging track, four racquetball courts, a squash court, three multi-purpose courts for basketball or volleyball, and an aerobics and martial arts room, as well as new offices. In addition, renovations to the original multi-purpose building will result in a new women's locker room and an expanded weight room.

"I think the impact on the university will be to provide many more opportunities for students, faculty and staff to take part in recreational and fitness activities," says Mullin.

Construction of the facility has been one of the major thrusts of campus fund-raising efforts in recent years. Of the $4.1 million required to construct the rec center, $1.25 million has been committed by the students through an increase in their fees and another $2.05 million has come from private funds. But the campus still must raise another $800,000 through private sources to pay for the building.

UMR's Division of University Advancement, which is responsible for securing the private funds, is taking several approaches to the project. According to **Kittie Robertson**, director of advancement services at UMR, the campus is looking to alumni, faculty, staff and parents of UMR students for the balance. The campus also has established several naming opportunities for donors who give

Name that room!

Here's your chance to show your Miner pride by making a lasting commitment to the remaining unnamed areas in the Recreation and Intramural Center.

Building	**$500,000**
Natatorium	**$200,000**
Multi-Purpose Courts (3)*	**$100,000 each**
Indoor Track	**$100,000**
Racquetball Courts (4)	**$30,000 each**
Squash Court	**$30,000**
Weight Training Room	**$20,000**
Locker Rooms (4)	**$25,000 each**
Offices (2)*	**$10,000 each**
Executive Offices (3)	**$20,000 each**

*(one already named)

[Left] Workers with Curtiss Manes Construction Co., Inc. prepare for the pouring of concrete floors for the new recreation facility. In the background is the west side of the Gale Bullman Multi-Purpose Building.

$1,000 or more. At the same time, the UMR Parents Association is sponsoring a campaign whereby donors may have their names inscribed on a brick.

"The only other building where we have had this done was with Castleman Hall, when parts of it were named while it was going up," Robertson says.

The rec center project gives anyone wanting a permanent presence on the campus ample opportunity to do so. While some portions of the building have been named, two of the multi-purpose courts, the track on the second level, the expanded weight room in the Bullman Building, the racquetball courts, the swimming pool and the building itself remain unnamed.

The most recent push to conclude the recreation center funding hinges on a proposal to the Kresge Foundation. Through its challenge program, the Kresge Foundation will award funds that can only be used as a dollar-for-dollar match to leverage additional private funding.

"The Kresge Foundation is designed to help a campaign," says Robertson. "I feel very confident that our proposal will be funded by Kresge, and it is exciting. We have never been funded by a major private foundation before."

The brick-naming program, implemented last November by the UMR Parents Association, offers any individual or group the opportunity to "buy" a brick for the building for either $100 or $500—and have his, her or their name inscribed on the brick. To date, this effort, designed to raise $100,000, has brought in more than $54,000. The project is expected to be completed before the end of this academic year.

Private funding, not only for the recreation center but for other campus construction projects, seems to be gaining importance these days. This climate makes the task of paying for new construction or renovation more challenging.

"Long gone are the days in which the state pays the entire cost for buildings, and raising money for bricks and mortar is hard to do," Robertson says. "People who give money like to feel their gifts benefit the students either in terms of scholarships, or in terms of educational excellence through fellowships, professorships and faculty chairs. It becomes a people investment versus a building investment."

But bricks-and-mortar investments such as the recreation center do benefit students.

"This project is extremely important to the university community because it will provide opportunities which have been lacking as far as recreation and fitness," Mullin says. "Students not only need the physical fitness, but also mental fitness by reducing stress through exercise and other recreational activities. This new facility will provide the gym space necessary to meet those needs."

"It is important to have good facilities for our students," Robertson adds. The condition of campus structures, as well as their availability, can leave lasting impressions on a prospective student, she says. "UMR is competing for the best and brightest, and adequate facilities do play a role in students' decisions.

"With this being a public institution, there is a feeling that the state should pay for buildings, but it can't and won't any more," Robertson says. "The state will always require a commitment from the campus, and it must come from private funds. We have become 'state-assisted' instead of 'state-supported.'"

And in the case of the recreation center, all of the funds are coming from private sources and campus commitment.

With the new recreation center and other projects, UMR is doing its part to prepare students for the 21st century. And the campus will continue to look to its friends in the private sector to keep UMR moving in that direction. ■

SPORTS BRIEFS

- Lady Miner track and cross country runner **Becky Wilson** is the first recipient of the Ken B. Jones MIAA Women's Student-Athlete of the Year Award in July. The award is based on athletic and academic accomplishments as well as campus and community service.

  Wilson, a geological engineering major from Kirkwood, Mo., finished her collegiate athletic career as the holder of seven school records in track and field. Wilson also won MIAA championships in 1993-94 in the indoor 5,000-meter run and outdoor 10,000-meter run. She also became UMR's third-ever national qualifier for the NCAA Division II Cross Country Championships, and was named as the MIAA "Runner of the Week" three times last year.

  Wilson, who is scheduled to graduate in December, also excels in the classroom. She was selected to the academic all-district second team and to the MIAA All-Academic team in track and cross country for the third year in a row. In addition, she was picked for the academic All-America team by the Cross Country Coaches Association for the 1993 season.

COMING ATTRACTIONS...

- The two soccer teams combined to win only seven games last season, but with a solid nucleus of returning players, both teams hope to show improvement. The men's squad returns senior forward **Jim Chapman**, the three-time scoring leader who had six goals in 1993, and 11 other lettermen. The men's season started Sept. 3 at West Texas A&M University. The Lady Miners have seven returning letterwinners, headed by junior midfielder **Stephanie Ingalls** and sophomore midfielder **Zachlyn Thompson**. Thompson is the top returning scorer with four goals last year. UMR's offensive attack is expected to be aided by freshmen **Natalie Sanders**, **Amber Fischer** and **Chrissy Eckhoff**, and the return of midfielder **Katie Masterman**, who missed most of the 1993 season with a knee injury.
- On the cross country front, head coach **Sarah Preston** hopes the men's and women's squads can move forward after a solid 1993 campaign. Losses include **Becky Wilson**, the regional runner-up and national qualifier, and **Steve Hostetter**, who took fourth at the conference meet last fall. The men's team does have three of its top runners back, headed by junior **Bob Etien** and sophomore **Craig McCauley**, while the women return sophomores **Jennifer Frazer** and **Shannon Parker**.
- **Three-peat for swimmers?** The Miner swimming team, which opens its season with a home meet against Northeast Missouri State on Oct. 22, will be looking to pull off a three-peat at the 1995 regional meet. Returning for the two-time defending Mideast Regional champions are senior **Dikan Rendic** and sophomore **Bill Unzicker**, both of whom competed at last spring's NCAA Division II Championships. Also back are regional champion **Bill Elmore**, **Jay Meyers**, **Brad Cozad**, **David Cadoff** and **Wade Haggstrom**, all of whom placed at the regional meet.
- **Lady Miners basketball.** With MIAA scoring champion **Joee Kvetensky** now gone, the Lady Miner basketball team will turn to junior **Christie Williams** and sophomore **Heather Hartman** to lead the way. The Lady Miners have 10 returning letterwinners from last year's 17-10 squad and are poised to make a run at the first division of the MIAA standings.
- **Men's basketball.** The Miner men's basketball team aims to return to the MIAA Post-Season Tournament after a one-year absence—and hopes 6-9 junior **Jamie Brueggeman** can continue his improved play in the pivot. Brueggeman tied for the team lead in scoring last season for the 11-15 Miners.

  For the first time since the 1982-83 season, both basketball teams will open at home on the same date, Nov. 19, with the Miners taking on Lyon College and Lady Miners facing Central Methodist

Get it to Go!

Yes! I want to display the Miner license plate! I've enclosed my check for $25. Please send my license plate authorization form to:

Name: _____

Address: _____

CityState/ZIP: _____

Home/Bus. Phone: _____

Mail this form with your check payable to: MSM-UMR Alumni Association, Alumni Office, Castleman Hall, University of Missouri-Rolla, Rolla, MO 65401-0249

It costs so little to show the world you're a Miner. For a minimum donation to the Alumni Association of $25 (plus regular state license fees), any Missouri motorist may obtain a Miner license plate. All proceeds go exclusively to the license plate scholarship fund. Send in your check and the form at left to get tagged and go!

Miner Cookin'

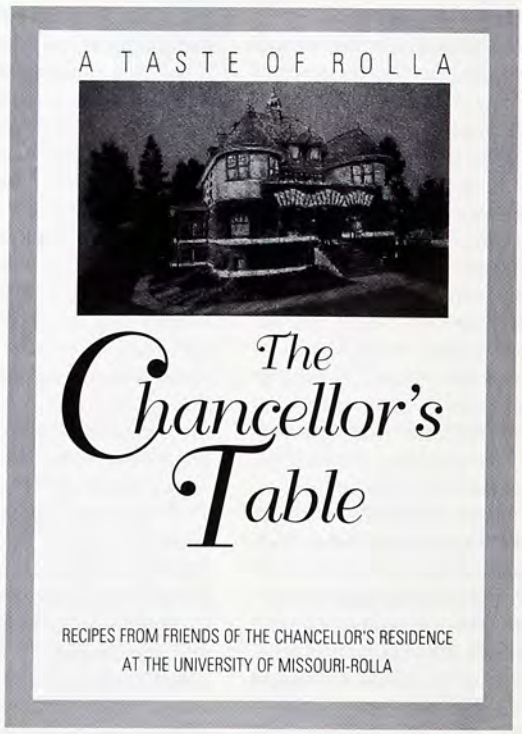
Here's your chance to try out some great recipes *and* make a contribution toward refurnishing the dining room in the Chancellor's residence!

The Chancellor's Table is full of hundreds of recipes submitted by alumni, friends and faculty of the University of Missouri-Rolla—what a great gift for a friend or for yourself! And, proceeds from the book will go toward buying badly-needed new furniture for the formal dining room—a room used for entertaining hundreds of guests of the university each year.

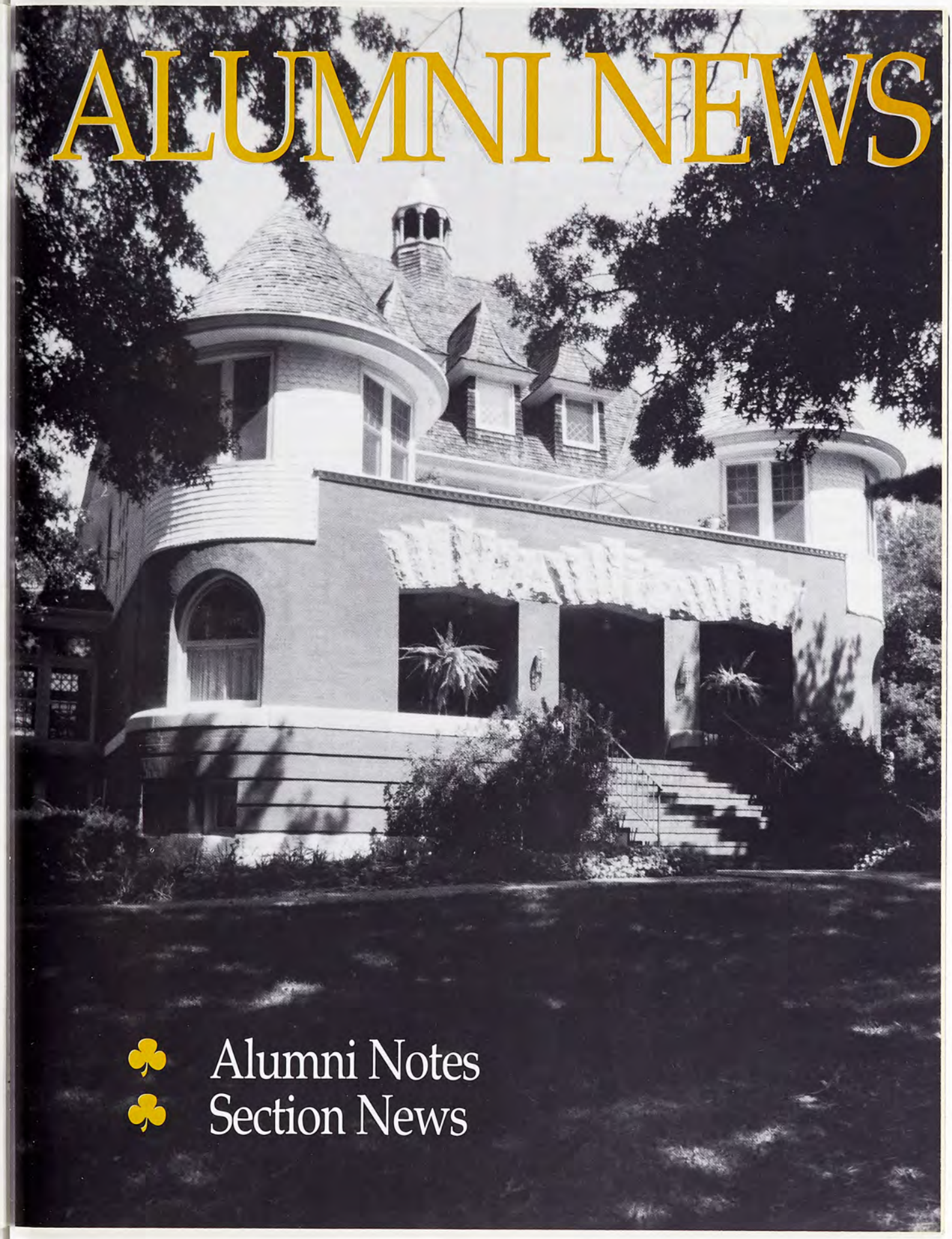
To receive your copy, send a check made out to the University of Missouri-Rolla for $20, plus $2.50 for postage to:

The Chancellor's Table
c/o Friends of the Residence
212 Parker Hall, University of Missouri-Rolla
Rolla, MO 65401

To make your Miner kitchen complete, you need a Joe Miner apron. In "Miner green" with white lettering it features a "cooking" Joe Miner featured in *The Chancellor's Table* cookbook. To order, send $12.50, plus $2 for postage to the address above.



ALUMNI NEWS



- Alumni Notes
- Section News

Twenties

1929

• **Henry D. Monsch**, MetE, and Ruth celebrated their 61st wedding anniversary in April 1994.

Thirties

1934

• **Edwin A. Hein**, ME, writes that he is still active at age 86.

1937

• **Robert L. Elgin**, CE, was awarded The Chapman's Award from the Missouri Association of Professional Archaeologists for "lasting contribution to the understanding of Missouri's past."

Forties

1943

• **E. Harvey Barnett**, ChE, MSChE'50, retired from Corning Inc. and opened EHB Consulting, specializing in the design and analysis of experiments to improve the quality and profitability of processes. • **Charles S. McCormick**, ME, announces the birth of his seventh grandson, Jeremiah Benjamin Smith, April 6, 1994, at Fort Worth, Texas. He also has two granddaughters.

1944

• **Daniel T. Blount**, ChE, writes, "We are still enjoying retirement between our two homes in Florida and Pennsylvania."

1948

• **Harvey B. Leaver**, CE, ProfCE'66, is a new member of the Missouri Society of Professional Engineers. • **Irvin D. Robbins**, CE, was elected to the Academy of Civil Engineers at UMR.

1949

• **Jesse W. Bowen Jr.**, EE, is retired but keeps busy with Elderhostels, traveling, fishing and volunteering at his church and at the lake association. • **Calvin M. Ochs**, ME, was presented an Extra Mile Resolution by the MSPE in June 1994. The honor is bestowed upon engineers who go above and beyond their call in performance and donation of personal time. • **Harold M. Telthorst**, CE, enjoys retirement with golfing, volunteer work, traveling and his children and grandchildren.

Fifties

1950

• **P. B. "YoYo" Davidson**, MGeo, and **Frank E. White** visited at Phil's home in Wimberly, Texas, in April. • **C. Tad Graves**, MGeo, and his wife keep busy with their four children and nine grandchildren. Tad looks forward to his Golden Alumni Reunion and continues to maintain the Southern California Section with **Fred Todd**, MetE'48, and **Jack Stadelhofer**, EE'49. • **Donald C. Griffin**, CerE, will retire in December 1994 from Electronic Products Inc., where he is a vice president.

1951

• **Neal B. Dowling**, EE, and Betty continue to enjoy the warmth of Phoenix, Ariz. Betty is still undergoing chemotherapy, but her attitude is as good as ever, and they hope to return to Rolla for Neal's 45th reunion in 1996. • **Earl E. Jackson**, MinE, works six months and travels six months out of the year in retirement. When he is not visiting his family in the Far East, Earl works for Raytheon Engineers and Constructors in Burns Harbor, Ind. • **Elmer D. Packheiser**, ME, is on the Martins Mill Covered Bridge Restoration board of directors, working to restore Pennsylvania's second largest covered bridge.

1952

• **Virginia F. Sabo**, CE, retired to a minifarm in Ohio's beautiful Hocking Hills.

1953

• **John H. Bender**, CerE, is plant manager for Refractory Service Corporation's refractory plant in East Chicago, which makes large monolithic shapes for use in eastern steel mills.

1954

• **Harold A. Koelling**, MetE, MSMetE'61, will retire in June 1995. He is now a semiretired professor at Mississippi State University. His wife, Jeanette, also will retire from raising greyhounds.

1957

• **Gary W. Davis**, EE, retired from engineering and keeps busy matting and framing art work, with a little hunting and fishing on the side. • **Walter H. Ellis Jr.**, GGph, MSMetE'64, retired from Kaiser's Valco plant in Tema, Chana, West Africa Oct. 1, 1994. He and Lois will retire to New Bern, N.C., where Walt expects to do some sailing. • **Charles Frey**, CE, retired from the Texas Department of Transportation and has made over five trips to Florida to watch the spring training games. He is also a substitute math teacher in his local Texas school system. • **Paul D. Gerlach**, EE, retired from Sabreliner in March 1994 and works part time with his sons in their residential real estate development business. • **Dale Schrumpf**, EE, founded the Government Careers Center in 1994, after retiring from engineering in 1993. He lives in California with his wife, Dianne.

1958

• **Philip E. Gerwert**, ChE, was elected president of the Water Environment Federation, an international professional organization dedicated to enhancing and preserving water quality worldwide. He works for General Motors in Detroit, Mich. • **Melvin C. Hudson**, Phys, retired from the U.S. Navy in 1993; he is consulting and working on a book about science in Greco-Roman literature.

1959

• **Robert J. Ahlert**, ME, has lived in Mexico for two years and loves it. He encourages other alumni to do business there and to look him up and Mary in Mexico City. • **Gary Chullino**, CE, was named assistant chief engineer of the Missouri Highway and Transportation Department. • **John M. Kuss**, EE, retired from Whirlpool Corp., research and engineering, in December 1993. He has his own workshop and is very happy. • **Clarence J. Phillips**, CerE, and Jean live at 875 20th Ave. Drive NW, Hickory, N.C. 28601. C.J. is president of Alcatel Cable Systems in Claremont, N.C. • **R. David Plank**, CE, ProfCE'75, was elected to the Academy of Civil Engineers at UMR. • **Stanley Waxman**, MetE, works at a local hospital in the radiology department. He lives in Livingston, N.J.

Sixties

1960

• **Lewis K. Cappellari**, Phys, is working on an electro-optics project at Edwards Air Force Base, where Hughes Aircraft Co. converted a 720 jet into "a flying IR Lab," of which he is a crew member. • **Kenneth D. Corbin**, CE, retired from

Special Notice to Friends of Ike

The 50-year anniversary class of 1944 is sponsoring the establishment of the "Francis 'Ike' Edwards Scholarship Endowment." Ike was our MSM-UMR Alumni Association's first paid employee, serving as executive secretary from 1953 until his death in 1975. Anyone who has not yet been personally contacted and who wishes to remember Ike by contributing to the endowment is encouraged to call Don Brackhahn at 1-800-JO-MINER for details.

—Hans Schmoldt, '44

Policy for Publication of Alumni Notes in the *MSM Alumnus*

- We are happy to announce weddings, births and promotions, after they have occurred.
- We will mention a spouse's name if it is specifically mentioned in the information provided by the alumnus.
- The MSM Alumnus will announce deaths if information is submitted by an immediate family member, or from a newspaper obituary.
- We will print addresses if specifically requested to do so by the alumnus submitting the note.
- We reserve the right to edit alumni notes to meet space requirements.
- We will use submitted photos only as space permits.

the St. Louis District Corps of Engineers in October 1993 with over 33 years at that installation. • **Paul R. Jordan**, EE, works for TRW Inc. in California doing space communication system design. • **John H. Miller**, CerE, retired from Schuller International Inc. and started Technology Services Co., offering glass process consultation, patent procurement and technology marketing and licensing services.

1961

• **Donald S. Marler**, EE, lives in Des Peres, Mo., and works as an electrical engineer with Holt Electric. • **Richard H. Redline**, MetE, retired from Elkem in January 1994; he was manager of Elkem's ferrosilicon operations in Ohio.

1962

• **Michael S. Herzog**, ChE, writes, "I was involuntarily retired a year and a half ago; now I am mixing contract work and consulting with travel and church work. Mary retired after 30 years in county government; I feel myself drifting towards full retirement, too." • **Gerald E. Huck**, EE, writes, "I enjoy Florida in the winter and Illinois in the summer—the best of both worlds!" • **Gerald C. Uhe**, Chem, retired from teaching high school chemistry and physics in June 1994, with full pension. He was named one of the top 14 physics teachers in Illinois for 1993-94.

1963

• **Jack L. Crawford**, EE, MSEE'64, accepted the IBM early retirement incentive after 30 years at IBM. • **Robert A. Taylor Jr.**, EE, was in charge of the first primary flight liquid crystal display certification on commercial aircraft; a 727-200 supplemental-type certification was granted in April 1994. • **Allen K. Thoeni**, ChE, retired in June 1994 after 30 years at Allied Signal's Kansas City Division.

1964

• **Dr. William H. Daniels**, MSCerE, PhDCerE'69, a corporate vice president for Hollinee Corp., serves as general manager both for FIBAIR Co. in Reedsville, W.Va., and for Nicofibers Co. in Shawnee, Ohio. • **David M. Griffith**, CE, took on the duties of general manager of the aviation and industrial group at Burns & McDonnell. David is a vice president with 26 years at Burns & McDonnell. • **Myron E. Gruber**, EE, is engineering manager for Pauwels Transformers Inc. in Washington, Mo., having moved there from Cooper Power Systems in Wisconsin. • **John E. Hoel**, Phys, retired as a consulting patent attorney with IBM and joined the law firm of Pollock, VandeSande and Priddy in Washington, D.C. • **J. Ronald Miller**, ChemE, was named vice president of worldwide product supply coordination, laundry products and fabric conditioners, for Procter & Gamble Worldwide. He lives in Cincinnati, Ohio. • **Thomas E. Payne**, ChE, moved to New Orleans for a start-up opportunity with TransAmerican Refinery.

1965

• **Garry A. Bennett**, Chem, MSChem'69, writes, "In the last 15 months, I have lost 200 pounds, have been elected to my church's board and participated in the Houston Storytellers' Guild's Annual Liars Contest. All of this is true!" • **James W. Crafton**, PetE, joined Snyder Oil Co. with the responsibility of developing technology for competitive advantage; he had spent 11 years on the faculty of the Colorado School of Mines. • **Robert H. Schlutow**, CE, MSEMgt'68, reports that daughter Tracy graduated in December 1993 from Fontbonne College with a degree in fashion merchandising. • **Dr. James E. Shelby Jr.**, CerE, MSCerE'66, PhDCerE'68, ProfCerE'93, was editor and primary author of the recently published book, *Rare Elements in Glasses*, and is working on another book, *Diffusion in Solids and Melts*. He is a professor at Alfred University. • **M. W. Vance**, CerE, MSCerE'67, was promoted to application and marketing development manager, refractories, serving Alcoa's refractory customers in North America.

1966

• **E. David Hayes**, EE, writes, "E-H Engineering Limited, with its staff of five engineers, has designed a high-speed 11 x 17 document scanner for use in service bureaus and other OCR-related OCR applications." • **Leonard C. Kirberg**, CE, PddEMgt'78, ProfCE'86, was elected president of the Consulting Engineers Council of Missouri. • **John Koeper**, EE, is the new executive director of the Metropolitan St. Louis Sewer District; he also keeps his duties as district director of operations. • **Robert Kulhan**, EE, transferred in April 1994 to station superintendent of Central Illinois Public Service Co.'s Coffeen Power Station. • **Robert D. Siess**, CE, president and chief operating officer of Tarlton Corp., was named the Outstanding Engineer in Construction for 1994 by the MSPE St. Louis Chapter.

1967

• **James W. Cumper Jr.**, CE, MSEMgt'74, serves as chief of construction and acting director, construction-operations directorate, for the Missouri River division of the Corps of Engineers. Jim, Janet and their two girls live in Papillion, Neb. • **John Gass**, ME, was promoted to reliability engineer for loader/backhoes and crawlers for Case Product Engineering's engineering quality and reliability group. • **Randall K. King**, EE, is alive and well, with 27 years at Sandia Labs. He would like to hear from friends at Box 5448, Albuquerque, N.M. 87185. • **Bryan A. Stirrat**, CE, writes, "Bryan A. Stirrat & Associates celebrates its tenth year in 1994!" The company specializes in environmental engineering and solid waste management, with five California offices and three more offices opening in other areas. • **George J. Tate**, EE, was named president of Eclipse-Dungs Controls in Minneapolis, Minn.

1968

• **Lynn Allan Frasco**, CE, was elected to the Academy of Civil Engineers at UMR.

1969

• **Richard R. Arnoldy**, CE, MSEMgt'73, was elected to the Academy of Civil Engineers at UMR. • **Richard T. Berning**, CE, was named chairman of the NSPE Professional Engineers in Industry division in July 1993. • **Rodney B. Hawkins**, Chem, transferred from the Inland Steel Co. to I/N Kote, a joint partnership between Inland Steel and Nippon Steel Co. Rodney is chemical consultant in the technology department and has worked with Inland Industries for 25 years. • **Ronald G. Jochum**, EE, is the director of power production with Southern Indiana Gas and Electric and lives in Boonville, Ind. • **Harvey E. Pautler**, ME, was promoted to large-engine business manager for Caterpillar-China Ltd. He and Carolyn live in Hong Kong and can be reached at Cat-China Ltd., Level 8, One Pacific Place, 88 Queensway, Hong Kong. • **James D. Payne**, CE, is a proud dad. His son, Jared, was appointed to attend the United States Naval Academy in Annapolis, Md. Jared also was named an all-state defensive end by the *Chicago Sun-Times* and defensive MVP at the annual Shriners' All-Star Game. • **Glenn P. Tomlin Jr.**, EE, is software manager for the U.S. Army's developmental Comanche helicopter program. His oldest son earned his degree in criminal justice; his second oldest son attends East Central Community College, and his daughter is a freshman in high school. • **Earl M. Worstell Jr.**, MSEE, writes, "My wife, Carla, is one of relatively few people to have undergone a liver transplant. After a year spent in a difficult recovery, she is doing well."

Seventies

1970

• **William D. Alexander**, ChE, teaches physics and physical science at Winnetonka High School in the North Kansas City School District. • **John E. Branham**, CE, reports that son Justin has completed his freshman year at UMR. • **Harold E. Chenoweth**, ChE, has completed his first year with Fina Oil and Chemical at their HDPE facility in the Bayport complex near Houston; "any friends in the area, please call." • **David F. Hollrah**, CE, lives with his wife and four children in Omaha, Neb., and works for Applied Power Associates Inc., an engineering architectural firm. • **Glen A. Larsen Jr.**, CerE, was promoted to associate professor of finance at Tulsa University and is a member of the 1993-1994 executive board of the award-winning MSM-UMR Alumni Association Oklahoma Section. • **Charles W. McTyer**, EE, is project manager with AT&T, business communications services division, in the San Francisco Bay area. He was elected vice president of facilities planning for the Project Management Institute, Northern California chapter. • **Anthony Novembre**, Psyc, was appointed superintendent of South Amboy Schools in New Jersey in January 1994. • **Veo Peoples Jr.**, ChE, was appointed a director of the Federal Reserve Bank of St. Louis; for the past 10 years, he has practiced law with Peoples, Hale and Caleman law firm. • **David L. Raby**, CE, MSCE'73, writes, "I moved in January 1994 to the twin cities; I am still with CH2M Hill." Daughter Sarah is a junior at the University of North Carolina, and daughters Jessica and Mary are in high school. • **Michael C. Turco**, ChE, MSChE'75, works for Automation and Control Technologies in St. Louis. He retired from Shell Oil Co. in 1993 after 25 years of service. • **Darrel E. Wortman**, EMgt, and Nancy moved to Rochester, Minn., where Darrel accepted a position with Lou-Rich Inc. Contract Manufacturers.

1971

• **John H. Atkinson III**, MSEMgt, is developing environmental seminars for engineers, managers and regulators in the Midwest. He teaches seminars and offers credit courses at the UM-Columbia college of engineering. • **James O. Bondi**, EE, MSEE'72, PhDEE'74, moved to Texas Instruments' semiconductor group, where he works in commercial microprocessor design. • **Robert G. Butchko**, CE, MSEMgt'83, was elected to the Academy of Civil Engineers at UMR. • **Robert J. Campbell**, CE, MSCE'83, was elected to the Academy of Civil Engineers at UMR. • **James A. Faletti**, EMgt, MSEMgt'79, founded and operates a human resources consulting firm, Strategic Insights Ltd., in Olympia Fields, Ill. • **Jon D. Katin**, MSEMgt, retired from the U.S. Army after 27 1/2 years. He is the city engineer for Corvallis, Ore., and he would like to hear from old friends at 5045 Picadilly Circle, Albany, Ore. 97321. • **Larry D. Merry**, EE, MSEMgt'86, was named manager of Union Electric's Lakeside district in the Lake of the Ozarks in addition to his duties as manager of the Capital district in Jefferson City, Mo. • **Larry J. Schall**, CE, was named to the board of directors of SKW Technical Services Group Inc., a new subsidiary of Shafer, Kline & Warren. • **Lora Smith**, Engl, under the pen name Lora Roberts, will publish *Murder in the Marketplace* in 1995. Her current mystery, *Murder in a Nice Neighborhood*, is available from Fawcett publishers. • **Raymond R. Williams**, ME, is general manager of Masoneilan, a division of Dresser Industries. He lives on Seal Beach, south of Los Angeles, and is working on his executive MBA at Pepperdine University.

Stephen M. Thies, ME'72, was named president of Purolator Products Company's automotive products group in August. The automotive group accounts for approximately three-fourths of Purolator's annual revenues and employs approximately 2,400 people worldwide. Steve will continue to serve as vice president for Purolator in addition to his new role. Steve is an area director for the Oklahoma Section of the Alumni Association.

1972

• **Jack R. Beebe**, Psyc, Sheila and family live in Petersburg, Ill., where Jack works for the Illinois Commerce Commission and operates a part-time consulting business, Prairie Data Fields. • **Edgar G. H. Emery**, PetE, writes, "We have left the oil industry for the greener pasture of cattle raising in Missouri. We have 80 acres near Jerico Springs, Mo., and plan to add some cattle soon." • **Ray K. Forrester**, ChE, and wife Rachel announce the formation of The Forrester Group Inc., an environmental management consulting firm, in January 1994 in Springfield, Mo., where they live and have three children. • **Daniel E. Frisbee**, CE, is senior vice president of Fru-Con Construction Corp.'s civil/buildings group, which includes Fru-Con's St. Louis regional group. • **Stanley R. Howell**, EE, writes that son Jonathan has completed his freshman year as a mechanical engineering major at UMR. • **Paul E. Schlett**, CerE, earned his master of divinity from Mid-America Baptist Theological Seminary and is pastor of Hamilton Hill Fellowship, an inner-city church that held its first meetings in a garage. He is also a part-time ceramic consultant. • **Nancey (Drissel) Spaith**, Hist, and James Spaith were married Nov. 13, 1993. They live at 12300 West 65th Terrace, Shawnee, Kan. 66216. Nancey is president-elect of the Alumni Association Kansas City Section.

1973

• **Glenn R. Anderson**, CSci, lectures and teaches on I/S large systems topics throughout the world as a consulting instructor for IBM. • **Dr. Dave Begley**, EE, MSEE'76, PhDEE'78, has lived, worked and skied in Colorado for six years; he would like to get in touch with his old friends and classmates. • **John C. Brinton**, EMgt, works for Automation Products Inc. (API) in Earth City, Mo. • **Michael P. Edwards**, EE, just completed 15 years with Anheuser-Busch Companies Inc. • **Larry J. Jenkins**, PetE, and Betty are looking forward to a normal year after spending the past year having their home rebuilt "from the slab" due to tornado damage. • **Paul R. Metzler**, EE, and his wife are looking forward to life after Roxy retires from her military career in 1994. Daughter Tammi has completed her freshman year at UM-Kansas City. • **Thomas W. Richter**, CE, was elected to the Academy of Civil Engineers at UMR. • **Richard S. Schwentker**, Phys, received the Presidential Award for Excellence in Science and Mathematics Teaching at an awards ceremony in Washington, D.C., in April 1994. The award is given to one math and one science teacher from both the secondary and elementary levels in each state. • **J. Kenneth Thompson**, PetE, is president of ARCO Alaska in Anchorage. • **Curt T. Williams**, CE, was sent to Germany for four months by the U.S. Army Environmental Center to establish a European office to provide direct support to the Army's environmental staff in Europe.

1974

• **Timothy J. Carroll**, GGph, is a geologist with the U.S. Bureau of Land Management. He lives in Folsom, Calif., with wife Mary and son Patrick and stays busy regulating mining activities in the historic Mother Lode Gold Belt. Tim says hi to Al, Greg and Mitch. • **William P. Clarke**, CE, MSCE'79, was named secretary on the executive committee of the Missouri Society of Professional Engineers for 1994-1995. • **William O. Gooch**, EE, was promoted to Little Rock Division manager for Arkansas Power & Light Co. • **Dr. James R. Kauten**, EE, is a partner with Peachtree Cardiovascular and Thoracic Surgeons and is chairman of cardiothoracic surgery at Piedmont Hospital in Atlanta, Ga. He and Deanna have two children, Stephanie and Geoffrey. • **Peggy L. Kitchen**, MSTPhys, re-

tired from Moore Co. in 1992 and works as a private consultant specializing in technical writing and computer graphics. • **Robert V. Tiehes**, EE, and Alanna celebrated their third wedding anniversary in 1994.

1975

• **Duane Bequette**, CerE, EMgt'76, was promoted to superintendent of Ann Sachs Tile & Store, a division of the Kohler Co.'s plumbing group, in Portland, Ore. Leesa and their children are excited about moving to the Pacific Northwest. • **Thomas J. McGowan**, CE, is a senior engineer with the Marley Cooling Tower Co. in Kansas City, where he lives with wife Judy and their five children. • **Michael W. Joshua**, EMgt, president of J.M. Products Inc., served as co-chair of the Arkansas Regional Minority Supplier Development Council's dinner and ceremony in Little Rock, Ark., honoring the first inductees into the new Arkansas Black Hall of Fame. • **David L. Matthews**, CE, is project manager for H.C. Price Construction Co. in Alaska, working with oil field development projects and pipeline maintenance. • **Charles R. Moede, Ph.D.**, EE, was NASA's training leader for STS-66 and will lead the training for STS-74, which will be the second docking mission to the Mir space station. • **Patrick A. Noland**, Chem, MSChem'76, who works for ABC Labs Inc., was promoted to team leader of a group that does analytical method development and special projects. • **Douglas A. Reading**, EE, and Glenda relocated to Virginia with Lockheed Missiles and Space Co. and expect their third granddaughter in 1994. • **Carl Sorrell**, CerE, is general manager of Summitville Tiles in Morganton, N.C.

1976

• **Dennis W. Crowe**, MSEMgt, retired from the U.S. Army Advanced Attack Helicopter Program's management office in 1991. He works as program administrator on an advanced rotorcraft program with Boeing Helicopters in Philadelphia. • **Anmarie "Annie" Hall**, Chem, would like to hear from old friends at 523 Grimes, Naperville, Ill. 60565. • **Mark T. Hicks**, GeoE, lives with wife Deborah and their two children in Edwardsville, Ill. • **Michael J. Mochel**, Phys, serves as the Minuteman III Guidance Replacement Program manager in the ICBM System program office at Hill Air Force Base, Utah. • **Melanie (Miller) Naeger**, Chem, husband Bob and their four children continue living in the Netherlands after several years of living overseas, which Melanie says has been quite a challenge. • **Jeff P. Wassilak**, CE, accepted a job as an engineer in the environmental engineering department of Horner & Shifrin Inc. in St. Louis, Mo.

1977

• **Brent S. Barton**, EMgt, was elected president of VSM Abrasives Corp., a company which manufactures and distributes industrial coated abrasives. • **Larry H. Buchtmann**, MetE, was promoted to plant manager for Mirro Co. in Manitowoc, Wis. Mirro makes aluminum cookware and bakeware. • **Karen (Daily) Clifford**, Engl, Hist, is a freelance writer for the *South Bend (Ind.) Tribune* and is on the 1994 committee for the new South Bend College Football Hall of Fame. • **John E. Heidbreder**, EE, and Pat live in St. Peters, Mo., with their four children. John is project director, Midwest division, for McCarthy Bros. Co. • **Leslie A. Noland**, CSci, took a new job at Instec, a small company where Leslie develops software tools for the insurance industry. • **Dr. Emmett R. Redd**, Phys, MSPhys'79, PhDPhys'86, presented a paper and poster at the Missouri Academy of Science at Southeast Missouri State University in April 1994. • **Terry A. Sudholt**, CE, manages construction, renovation and service contractors at the Weldon Spring remedial action project site in St. Charles County, Mo.

1978

• **Rosa (Herman) Hall**, ChE, and Robert were married Dec. 16, 1993. They live in Beaumont, Texas, where Rosa works for E.I. DuPont and Robert works for Burns International. • **Norman Haas**, MinE, competed in the 18th

PIONEER ENGINEER URGES MINORITIES TO FOLLOW

When Adonica Randall, CSci'75, started working for GE Medical Systems in Waukesha in the 1970s, the other engineers thought she was a secretary.

There were few female engineers back then and even fewer black female engineers. So she set them straight.

"It was 'Honey, fetch me a cup of coffee' or 'Honey, fetch me a copy.' 'I don't think so,'" Randall said.

"The guys all thought I was a secretary. They had never seen a black female engineer. It took me a couple of years to establish myself."

Randall, 40, now works for IBM as a marketing specialist. She also teaches entry-and senior-level computer science courses at Alverno College.

"There's nothing wrong with being a secretary. There's something wrong with making that assumption," Randall said. "If there's a new guy on my floor, I don't immediately assume he's a new secretary."

Randall isn't sure why there are so few female engineers but said the expectations of some teachers may have something to do with it.

"There's still unfortunately lots of teachers who make those decisions that are gender-based. They think girls aren't good in math. That's a crock," she said.

In her computer courses at Alverno, she hears complaints from women who say they aren't good at working with computers.

"I tell them, 'Sure you are. If you can bake a cake and deal with the measures, then you can work with computers.'"

After earning a bachelor's degree in computer science at the University of Missouri-Rolla and working on catalytic converters at General Motors' proving grounds in Milford, Mich., she had 42 job offers to choose from.

The St. Louis native wanted to stay in the Midwest, so she took a position with GE Medical Systems. Her husband, an electrical engineer, has worked at GE for 20 years.

She stayed at GE for 10 years while earning a master's degree in biomedical engineering at Marquette University, graduating in 1979.

In between then and now, among other things, she has designed computer software, sold electron microscopes and was application development director at A.O. Smith Co. in Milwaukee.A science fiction fan and admitted "trekkie," Randall was inspired by the character Lt. Uhura, a black female communications officer, in the original "Star Trek" television series.

"I didn't realize it directly, but here was a minority female in a position of authority working with men on an equal basis," Randall said.

For Randall, choosing computers and engineering for a career was an easy choice because she was good at math and science classes.

She went to a high school for gifted and talented students where "I was surrounded by people who expected you to excel."

She won a scholarship to study architecture but then discovered computers and became hooked, "so I dumped architecture. I abandoned that because I couldn't draw too well."

The computers that attracted her were much different from the computers of today, which feature laptops, color monitors, computer games and other bells and whistles.

"You're talking about the '70s, when there were these big, old computers that took up three rooms. On the old IBM machines you needed 300 (punch) cards, and that was just to spell your name," Randall said.

Randall wishes there were more female and minority engineers because of the different perspectives they bring to the workplace.

Everyone solves problems through the filters of their own experiences, she said.

"Society has pushed that, in all things, there's only one answer and I need help in getting there," she said. "In the process, we've lost the ability to think.

"I think that's why minorities may do better. When they come to America, they learn how to get there, but it may be by a different road."

Choosing engineering as a career can be lucrative and rewarding. Starting salaries range from the mid-to upper $30,000 range.

There's also career longevity because engineering is constantly evolving.

By Meg Jones; reprinted with permission from the Milwaukee Sentinel

Computer scientist's moonlighting has a novel twist

It isn't often that an engineer is a main character in contemporary fiction. Even more rare are novels in which a character is an engineer from UMR. But one of the protagonists in *This Time*, **Mary Sharon (Brady) Plowman**'s first novel, is the quintessential Rolla engineer. "I'm sure you could find him walking around all over campus today," Plowman, CSci'77, says of Jake Brandon, the UMR graduate and hero of *This Time*.

Plowman, a St. Louis native who now lives in Issaquah, Wash., with her husband and three children, discovered her literary bent about five years ago. She enrolled in a creative writing course at Lake Washington Technical College in Kirkland, Wash., and there met the owner of Goodfellow Press, a Redmond, Wash., publisher that specializes in works by new writers. Encouraged by the writing course, Plowman began writing fiction during her evenings and weekends while continuing her career with Boeing Computer Services in Seattle. The moonlighting paid off, as she signed a contract to do five books for Goodfellow Press.

Plowman is wrapping up the first draft of her second novel, "White Powder," a story about drug smuggling through the snowfields of Mount Baker, Wash. The book is due out in January. She's also cooking up a plot for a techno-thriller involving computer encryption and espionage, a topic Plowman, as a program manager for Boeing's supplier network (SNET), knows something about.

You may not find any UMR types in her second or third novels, but she plans to revisit the campus in some future works. A member of the Kappa Delta sorority while at UMR, Plowman plans to someday write a novel set in Rolla and told from the perspective of a sorority house mother.

This Time is being distributed nationally by Ingram Book Co. and can be ordered through any local bookstore.

DID YOU KNOW?

You are represented in your alumni association by directors-at-large and area directors. Area directors are responsible for those areas that fall in their zip code range, and directors-at-large serve all alumni. See inside front cover for the directors that represent YOU.

annual Bank of Hawaii Kayak Challenge, a world championship open-ocean kayak race covering 32 miles of water. • **John R. Thro**, NucE, EE'81, became an instrumentation systems engineer at Paragon Engineering Services in Houston, Texas, after being out of the engineering business for seven years. • **Leonard A. Wolff**, MinE, was promoted to manager of mining engineering for Kennecott Minerals Co. in Salt Lake City, Utah.

1979

• **Michael J. Basler**, EE, MSEE'89, teaches electrical engineering part time at Southern Illinois University at Edwardsville. • **Richard B. Beck**, MSEMgt, was promoted to vice president with Burns & McDonnell, where he is manager of project development for Burns & McDonnell Waste Consultants Inc. • **Fred L. Bueler**, CE, was designated one of the professional remodeling industry's top achievers when he was named to *Remodeling* magazine's Big 50 list for 1994. Fred, who owns Bueler Inc., was honored at the 1994 Big 50 Conference in May. • **Salvatore J. Calise**, CE, MSCE'81, works for Camp, Dresser & McKee in environmental engineering and water resource projects. He, Marla and their children live in the Tampa Bay, Fla., area. • **James V. Hall**, MSCE, retired from the U.S. Army Corps of Engineers in April 1994. He is project manager for Brown and Root Environmental in Houston, Texas. • **David F. Hollingshead**, EMgt, was named administrative assistant for technology and instruction in the newly-created technology consortium formed by the Bernie, Gideon and Portageville school districts in Missouri. • **David A. Parks**, ChE, began his residency in internal medicine at Barnes Hospital in St. Louis last summer after earning his MD in May 1994. He spent 10 years at Monsanto while earning his degrees and hopes to work in a biomedical/engineering field. • **Joseph A. Safron**, LSci, is associate director, veterinary resources, with Barton Healthcare Corp. He lives with his wife and two children in a suburb of Chicago. • **Ric L. Washburn**, CSci, MSCSci'83, was promoted to information engineering administrator for the Missouri Department of Social Services. • **Gregory L. Wayne**, EE, Kathie and their children have been in Houston for almost 15 years, where Greg works for M.W. Kellogg Co.

Eighties

1980

• **Paul "Dan" Booher**, CE, MSCE'81, is vice president of construction for Wal-Mart in Mexico. He moved his family to Mexico City, where he will develop the Club and Supercenter concepts. They will return to Arkansas in 1995. • **Kristy (Daily) Defenbaugh**, GeoE, and Brad are moving to Calgary, Canada, with Mobil Natural Gas. They lived in Houston, Texas, for 13 years. • **Thomas A. Dittmaier**, CE, writes, "As of March 1994, I have left Burns & McDonnell to work at the Knoxville, Tenn., Utilities Board. It is quite a change from consulting, but I really enjoy the new and challenging opportunities for me." • **Dean W. Ekberg**, MSGeoE, writes, "I am still a rock jock." He is president of Ekberg Material Inc., operating a dolomite quarry and a sand and gravel pit. His address is 4332 O'Connell St., Rockford, Ill. 61109. • **Dr. Paul W. Kramer**, ChE, MSChE'82, PhDChE'88, is a principal research engineer with Permea Inc. Wife **Laura (Pfautsch)**, ChE'81, works for Monsanto. They are enjoying life with 18-month-old engineer-to-be Andrew. • **Richard L. Maginnis**, EE, is a principal engineer for Distribution Control Systems Inc. He is married with three children and lives in Florissant, Mo. • **Linda (Hudgens) Michaelsen**, LSci, and Ward were married Aug. 14, 1993. Linda is a systems analyst for HealthCare Resources, a medical elect-data interchange company. • **Scott A. Palmer**, EE, was appointed production superintendent of Kraft Mill and Pulp Drying at Bowater Inc. Southern Division. • **Betty (Ellsworth) Ungerman**, PetE, is a corporate attorney with Fina Oil and Chemical Co. and Steve is in private law practice in Dallas, Texas.

1981

• **Paul G. Baldetti**, EE, writes, "After five years of running an LBO, I am back in the Fortune 500. Burks Pumps was sold to Crane Co. and renamed, (so) same job, new name." • **David M. Gresko**, ME, has responsibility for providing business analysis for ARCO's core product (propylene oxide and derivatives) business lines and manages the company's capital spending program. • **Edward E. Hart**, Engl, relocated to a small farm in Illinois, where he hopes to pursue some serious gardening and writing. • **Brian Matthews**, ME, and wife **Carol (Deusinger)**, CSci'86, own and operate CDM Inc. Founded in 1991, the company operates fantasy sports challenges for *The Sporting News*, offering nine different challenges each year, with over 20,000 customers and 40 employees. • **David C. McGownd**, CSci, and Rhonda live in Fort Collins, Colo., with their two daughters. David works for Hewlett-Packard Co. in Loveland, Colo. • **Michael W. McMenus**, LSci, is senior environmental chemist at Terracon Environmental Inc. in Kansas City, Mo., and writes, "I have the misfortune of having to work in Colorado and Utah during the ski season." • **Lewis C. Weingarth**, EE, is senior electrical supervisor, DP, on the scientific research vessel Sedco/BP 471, engaged in a long-term project for the Ocean Drilling Program at Texas A&M University. They are drilling in the Atlantic Ocean and will visit the Arctic and Indian Oceans in 1995. Lew works under **Glen Foss**, GGph'66, ODP operations superintendent. They have worked together since 1984.

1982

• **David J. Baginski**, EE, works for Lockheed as a specialist engineer on the F-22 Advanced Tactical Fighter Program. He and Mara live in Georgia. • **Douglas K. Dace**, PetE, moved from Sullivan to Bourbon, Mo., last January and works "28/28 in Indonesia." • **Paul O. Herrmann IV**, EE, switched jobs to a smaller company, JcAIR, which manufactures avionics test equipment for commercial airlines. Cheryl is eight; Matthew is six, and Joel is three. • **Eric G. Politte**, ME, is president of two successful companies, including an environmental/regulatory engineering company and an environmental remediation company. Eric, Sue and their three children are doing great in Houston, Texas. • **Vernon R. Schaeperkoetter**, CSci, and wife Kathleen have been married 11 years and have three children, Andrew, Matthew and Melanie. They live in St. Louis, Mo. • **Dr. Paul R. Stricker**, LSci, has completed his residency in pediatrics at Arkansas Children's Hospital and a fellowship in sports medicine at UCLA; he works as a pediatrician and as team physician for Vanderbilt University. He still swims and would love to hear from old swimming buddies. • **Craig A. Wohlers**, EE, works in Exxon's property sales and acquisitions group and lives with his family in Houston, Texas.

1983

• **Michael P. Dallmeyer**, ME, is a senior project engineer working in the advanced fuel injector design group for Siemens Automotive. • **Gary J. Hayes**, ChE, MSEMgt'84, earned his PhDChE in August 1993 from Clemson University in South Carolina. • **Richard Kirk Maguire**, EMgt, MSEMgt'85, and Shannon moved to Jacksonville, Fla., where Kirk is TQC manager for a Metal Container Corp. plant. • **Michael R. Matthew**, EE, is a consultant for Ernst & Young, helping manufacturing and high-technology corporations to increase their competitiveness. He earned his MBA from the University of Southern California in December 1993. • **Lynn (Jones) Miskell**, CSci, is a system analyst for Pizza Hut Corp. in Wichita, Kan. • **Michael Moylett**, GGph, MSGGph'85, writes, "I am back in the oil patch! I am working the Permian Basin and the Rockies and am always meeting UMR alumni." • **Philip B. Musser**, EE, transferred to manager of technical services in the marketing department at Missouri Public Service Co. • **Mark E. Silver**, EE, earned his MBA from UM-St. Louis in May 1993; he works in the electronics and space division of ESCO Electronics. • **Michael I. Spirz**, Hist, teaches geography and government at Montgomery County R-2 High School in Missouri, advises the Student Council and coaches junior varsity and freshmen girls' basketball. • **Douglas J. Stewart**, ME, and Christine (Hallberg) were married July 5, 1991. Douglas is a Methodist minister in Coulterville, Ill.

• **Eric H. Lidholm**, GeoE'84, MSCE'90, was named the 1994 Young Engineer of the Year, the highest award presented to an individual engineer by the MSPE. Eric is chief geotechnical engineer with Engineering Surveys and Services in Columbia, Mo., and is president of the MSPE Central Chapter. He will be the MSPE's nomination for the national engineer of the year award in 1995.

1984

• **Edward J. Bradley Jr.**, EE; **Vince Grelle**, EE'81, MSEMgt'87, and **David Schepers**, EE'75, have been working together on power quality problems at Union Electric in St. Louis. Ed writes, "The hot weather has kept us busy, but not as much as the emergencies caused by the flooding last year." • **Suzanna M. Long**, Hist, Phys, was part of the National Archives team during the records management evaluation of the Corps of Engineers and was selected to author the NARA Regional System comments. • **Robert Tad Magruder**, ME, and **Angela (Murch)**, a non-degree alumna, live in the suburbs of Detroit. Angela earned her MSEE from the University of Michigan in April 1994, and Tad recently began his eighth year at ASC Inc. • **Eldon W. Scites**, EE, works for Dynetics Inc. in Huntsville, Ala. • **John G. Wilmes Jr.**, EE, works for Cutler-Hammer, and wife **Barbara (Wernert)**, GGph'85, MSEMgt'93, works for

McDonnell-Douglas. They write, "Our life is our two-year-old son, Timothy!"

1985

• **Omar I. Aguilar**, NucE, MSNucE'86, was promoted to manager, financial management and controls, in February 1994, with responsibility for all financial management and long-range planning related to AEP's nuclear generation department. • **Steven M. Bretzke**, EE, works at home in network marketing as a Watkins independent marketing director. He and **Virginia**, CE, live in Lee's Summit, Mo. • **Randy Buck**, ChE, is a production superintendent for 3V Chemical Inc. in South Carolina. • **Christopher D. Cragg**, NucE, lived and worked in Brussels, Belgium, in 1993. He is senior engineering consultant at SAIC. • **Sam C. Mahaney**, Hist, transferred to Scott Air Force Base, Ill., in June 1994 to pilot the evacuation aircraft C-9 Nightingale. Sam and family are happy to be living closer to home. • **Jane (Stone) Spann**, PetE, husband Steve and their son, Paul, live in Atlanta, Ga., where Steve works for AT&T and Jane works part time for the EPA. They would love to have visitors. • **Julie (Deles) Stansfield**, LSci, completed her training in internal medicine in June 1994 and was selected to be a member of the critical care/pulmonary medicine department at UM Hospitals and Clinics in Columbia, Mo.

1986

• **Karie F. Andersen**, LSci, completed her pediatrics residency in June 1994 and practices pediatrics at the San Diego Naval Hospital in California. • **Greggory T. Bahora**, ME, is in Indonesia with a Black & Veatch power plant start-up team. He invites former UMR associates to contact him upon his return to Kansas City in 1995. • **Kent R. Erickson**, ChE, became a partner with his patent law firm, Litman, McMahon and Brown. • **John D. Hegger**, ChE, works for Anheuser-Busch and **Rebecca (Brinkley)**, ME'88, is having fun being a "domestic engineer." • **Brian G. Mitchell**, PetE, has been married for over eight years and works for the EPA, Region Seven. • **Jacquelin (Deane) Selle**, Engl, teaches English and French at St. Paul's Episcopal Day School in Kansas City, Mo. She recently directed their production of "The Sound of Music" and put the finishing touches on their annual literary magazine. • **Robert E. Zdvorak**, EMgt, works as a senior cost analyst for Great Western Publishing and is finishing his MBA. He and Maria enjoy life in Phoenix with their son, David.

1987

• **Brian G. Andrzejewski**, Hist, and **Jennifer (Lynch)**, AMth'88, were married and have two children, Jordan and Taylor. • **Phillip M. Borthacyre**, Hist, announces that wife Kim graduated from UMR in May 1994 and writes that their children get bigger and busier every day. • **Fred J. Ellermeier**, EE, enjoys life in the suburbs of Kansas City, writing, "My job as a consultant for Black & Veatch is very rewarding, and my second career as a husband and a father is a worthwhile endeavor with many blessings." • **Patrick F. Emmett**, Hist, makes digital maps at the U.S.G.S. in Rolla. Wife Rosanne will earn her BA in psychology from UMR in December 1994. • **George R. Farmer Jr.**, EE, earned his MSEE in May 1993 and his MSEMgt in May 1994 from Washington University in St. Louis. • **Larry A. Pickrell**, MSCSci, has a new job engineering patient monitoring equipment for Nellcor in Kansas. • **Matthew W. Scholl**, ME, says "Yo! To all the great people I knew at Rolla." He lives in Kansas City, Mo., and works for MAC Equipment Inc. • **Joaquin "Jon" Tormo**, MSEMgt, is maintenance support engineer for CSL Limited in Victoria, Australia, where he continues to live. • **Cynthia Sue Weber**, EMgt, has worked for the State of Missouri Division of Workers Compensation for about a year. She and Paul have two boys, Zachary and Alex. • **Fred Worth**, MSAMth, PhDMath'91, was promoted to associate professor of mathematics and computer science at Henderson State University in Arkansas. He is also president of the board of directors for the new Boys' and Girls' Club of Clark County.

FUTURE MINERS

Jack R. Beebe, Psyc'72, Sheila and sister Sophie adopted Cory, 6, and Brittany, 5, in 1994.

David J. Roth, MetE'74, and Bobbi, a boy, Nicholas Lee, April 28, 1994.

James J. White, CSci'74, and Kimberly, their second child, Kevin James, May 21, 1993.

Kathryn (Hand) Becker, CSci'76, David and brother Zachary, a boy, Jacob David, June 30, 1994.

Thomas E. Mueller, EMgt'80, and **Lisa (Carroll)**, MetE'81, a boy, Michael, Jan. 21, 1993.

Betty (Ellsworth) Ungerman, PetE'80, and Steve, a boy, Meyer David, May 30, 1994.

David M. Gresko, ME'81, Lisa and brother Robert, a girl, Katelyn, Dec. 28, 1993.

David J. Baginski, EE'82, and Mara, twins, Patrick and Laura, Sept. 14, 1993.

Charles D. Malin, EMgt'82, and **Diana (Bindemann)**, ChE'83, their second child, Hannah, March 29, 1994.

Charles K. Peacock, EMgt'82, and Barbara, their second child, Meredith Joelle, March 16, 1994.

Eldon W. Scites, EE'84, and Kim, their first child, Robert Wayne, Dec. 23, 1993.

Omar I. Aguilar, NucE'85, MSNucE'86, and Claudia, their first daughter, Sophia Celine, Aug. 29, 1993.

Steven M. Bretzke, EE'85, and **Virginia**, CE'85, a girl, Anna Louise, Oct. 31, 1993.

Randy Buck, ChE'85, and Patricia, a girl, Candace, Feb. 4, 1993.

Mark R. Hall, ChE'85, and Debbie, a girl, Amanda Elizabeth, June 6, 1994.

Kent R. Erickson, ChE'86, and **Lisa (Wilcox)**, EE'89, their second child, Andrea Renee, Feb. 4, 1994.

John Hegger, ChE'86, **Rebecca (Brinkley)**, ME'88, and brother Johnny, a girl, Elisabeth, Feb. 22, 1994.

Jim Reinhardt, EE'86, **Mary Jane (Paganini)**, CSci'86, and brother Kevin, a girl, Nicole, Jan. 13, 1994.

Lisa (Meister) Holcomb, EE'87, and Steven, a girl.

Andrea (Cairns) Foust, EE'88, and Duane, their second child, Kayla Jeanne, Feb. 4, 1994.

Thomas Sieckhaus, CE'88, and Michelle, a boy, Matthew Riley, July 31, 1994. Proud grandfather, **Robert H. Sieckhaus**, CE'63.

Tammy (Neudecker) Husman, EMgt'89, and **Frederick W.**, EE'91, their first child, Trevor James, May 4, 1994.

Dan W. Nobbe, EE'89, and Tammy, a girl, May 1994.

Stan Lindesmith, CSci'90, AMth'90, and **Lisa**, LSci'90, a girl, Emily Brianne, May 25, 1994.

Brian K. Osborne, CerE'90, MSCerE'91, and Michelle, a boy, Brandon, Feb. 8, 1993.

And a *very* special announcement:

Kent, CE'76 and **Lindsay Lomax**, Psyc'76, **Bagnall**, a daughter, Lydia Kent, Sept. 3, 1994. Lindsay is an associate editor of the *MSM Alumnus* and assistant vice president of the MSM-UMR Alumni Association. Lydia is also welcomed by her older sister Hannah.

Nineties

1988

• **Thomas P. Duggan Jr.**, AE, was promoted to a position in structural engineering with the Army Aviation and Troop Command. His wife, **Cheryl Tefft**, AMth'89, started her own company, Calligraphics, doing custom calligraphy and specializing in weddings. • **Dr. Carolyn S. Hathaway**, LSci, has two more years of pathology residency at St. John's Mercy Medical Center in St. Louis. • **Robert Ivy**, ME, was designated as a licensed professional engineer for Anderson Engineering Inc. • **Kewen Kevin Li**, MSCerE, earned his PhDCerE in August 1993 from Clemson University in South Carolina. • **Keith D. Martin**, CE, was designated as a licensed professional engineer for Anderson Engineering Inc. • **Kimberly D. Preston**, CerE, MSCerE'90, earned her PhDCerE in May 1994 from Clemson University in South Carolina. • **John G. Wesling**, CerE, MSCerE'90, and Margie were married in October 1993. They are renovating a 70-year-old house in Peoria, Ill. In his "spare time", John works as a ceramic research engineer for Caterpillar Inc.

1989

• **Fran Biagioli**, ME, becomes a doctor in 1995 when she graduates from the Medical College of Ohio; she is looking for a residency position on the West Coast. • **Christopher J. Frank**, ME, works as a vehicle engineer in Detroit, Mich. Friends may write to 22140 Columbia #125, Dearborn, Mich. 48124. • **Dan W. Nobbe**, EE, completed his MSEE at the University of Texas-Arlington and works for Motorola in Ft. Worth, Texas. • **Kirk A. Phillips**, AE, is a bioenvironmental engineer in the Air Force, based in Okinawa, Japan. He has two children and earned his master's degree in August 1993. Friends may write to PSC 79 Box 23569, APO, AP 96364-3569. • **Karen (Sedlacek) Veerkamp**, ME, still works for Amoco in Houston, where she and **Bill** (EE'88, MSEE'89) live with their two children, Jimmy and Emily.

1990

• **William J. Allen**, EE, and Janet (Fredericks) were married June 4, 1994. He works as a project engineer for Chicago loop-area high-rise buildings. • **Christopher A. Grose**, MSGeoE, is a senior engineer with GAI Consultants Inc. in Charleston, W.Va., where he lives with wife Ann and their two-year-old daughter. • **Stan Lindesmith**, CSci, AMth, and **Lisa Chon**, LSci, moved into their new house in April 1994. • **Robert L. Phillips**, LSci, finished his third year of medical school in June 1994 and is looking at family practice residency programs. • **Charles Witherspoon**, ME, and **Leslie (Vigna)**, ChE'91, were married Aug. 20, 1993. Leslie is a project supervisor for Trinity Consultants and Charlie is a mechanical engineer with the CW Nofsinger group. They live in Overland Park, Kan.

1991

• **James E. DeVaney Jr.**, AE, is still flying with the Air Force and having fun visiting all the world's hot spots. Friends may write to 5305 Eden Dr., Oklahoma City, Okla. 73135. • **Kyle E. Graves**, MSCSci, works as a system support engineer for Silicon Graphics in Houston, Texas. • **James L. Hill**, NucE, earned his MSNucE from the University of Illinois in January 1994 and has begun working toward his PhD.

1992

• **Anita K. Keck**, Hist, is a history teacher and assistant girls' basketball coach in Houston, Mo. • **Donald M. Newburry**, ME, attends graduate school at Vanderbilt University in Nashville, Tenn.

1993

• **Tony Kertz**, ME, was promoted to maintenance supervisor at Cargill and has bought a new house in Bloomington, Ill. • **Allison Leonard**, Psyc, joined the staff of the W.E. Sears Youth Center in Poplar Bluff, Mo., in April 1994. • **William A. "Tony" Phillips**, CSci, and Ami (Brown) were married July 16, 1994. Ami is completing her education, and Tony is designing and implementing computer networks for Texas Instruments in Dallas, Texas. • **Manfred Tullmann**, MinE, works as a shift engineer and inspector for one of the Boston Harbor Project tunnels.

Did you know?

Your lifetime gifts to the Alumni Association and the university entitle you to special recognition on three levels. Based on lifetime giving, including estates, you may be a member of the Director's Society, for total gifts of $100,000 and over; the Dean's Society, for total gifts of $500,000 and over; or the Chancellor's Society, for lifetime giving of $1,000,000 and over. Call Don Brackhahn or Lindsay Bagnall at (314) 341-4145 for more information.

St. Pat's Green

The 87th Annual St. Pat's Celebration is on its way and it is guaranteed to be the BEST EVER. The St. Pat's Committee would like to invite all the alumni to come and join in the celebration, as well as offer you the opportunity to buy your 1995 St. Pat's Green!

In order to purchase the 1995 St. Pat's sweatshirts, please send a check made payable to the St. Pat's Committee for $19 + $3 shipping and handling to:

St. Pat's Committee, c/o Mike Vishy, University Center West, UMR, Rolla, MO 65401-0249

Please remember to indicate size and quantity to order any of the other great St. Pat's merchandise, please contact Mike Vishy at 364-9783 for details.

Memorials

1920

St. Clair Homer, a non-degree student at MSM, died Aug. 13, 1984. He was a retired consultant with the State of Oklahoma, living in Sand Springs, Okla., with his wife, Valree.

1926

James D. Crawford, MinE, died May 19, 1994. At MSM, he was a member of Kappa Alpha and Sigma Gamma Epsilon and was president of his sophomore class. He spent most of his career in Alaskan placer gold mining and was a vice president of United States Smelting, Refining and Mining Co. in charge of Alaska operations at the time of his retirement in 1968. He and his wife, Alta, lived in Des Moines, Wash.

1927

Harold D. "Tom" Thomas, MinE, died March 2, 1994. At MSM, Tom earned eight varsity letters in basketball and football and was captain of the 1924-1925 Miner basketball team. He was a member of Lambda Chi Alpha and a veteran of World War II. He owned Thomas Construction Co. in Rolla. Tom was a great supporter of MSM-UMR and of the City of Rolla. He earned an Alumni Service Award in 1980, was a member of the Golden Shillelagh and was one of the original inductees into the MSM-UMR Athletic Hall of Fame in 1987. Through his generosity, the City of Rolla now owns Ber-Juan Park and the Holloway House near Tenth Street. Tom was retired in Rolla with his wife, Lois.

1932

Huel E. Perrey, EE, died March 10, 1994. Huel worked as an engineer for many years, retiring from McDonnell Douglas Corp., after which he owned and managed Bel Crest Apartment Motel in Clearwater, Fla. He lived in Florida with his wife, Nancy.

Robert J. Roesser, CE, died Dec. 10, 1993. He retired in 1975 after 50 years with the Erie County Health Department in New York and after 25 years as director of environmental health. He was a long-time donor to the MSM-UMR Alumni Association. Prior to his death, Robert had developed osteoartheritis and had become blind. He lived in New York with his wife, Eleanor.

1933

Dr. George W. Eckert, MSChE, PhDChem'36, died Dec. 24, 1993. He earned his BSChE from the University of Illinois in 1931. At MSM, he was a member of Phi Kappa Phi honor society. He worked as a research chemist with Texaco Refining until his retirement in 1972. George lived in Virginia with his wife, Berniece.

Mabel E. Phillips, Phys, Chem'47, died Feb. 26, 1994. At MSM, she earned the Phi Kappa Phi Book Plate award and received first honors at graduation. Mabel worked as a chemist with the U.S.G.S. for 27 years, retiring to Florida for some time before returning to Rolla, where she was an active volunteer in the community.

Rex E. Pinkley, CE, died Feb. 8, 1994. At MSM, he was a member of Pi Kappa Alpha, Interfraternity Council, the St. Pat's Board and the *Miner* staff, and he was a cadet lieutenant in the Army ROTC, Company D. Rex was a veteran of World War II, retiring from the Army as a lieutenant colonel. He retired after many years as a civil engineer with T.L. James and Co. in Louisiana, returning to Carthage, Mo., after the death of his wife, Aileen.

1934

Guy R. Miles Jr., CE, died Nov. 1, 1990. He came to MSM from Central College, and he spent most of his career working for the U.S. Army Corps of Engineers in St. Louis. Guy lived in St. Louis with his wife, Mildred.

1935

Edwin L. Dudley, CerE, died March 15, 1990. At MSM, he lettered in varsity football and was a member of Kappa Sigma and Blue Key. He worked as an engineer for many years, spending over five years as field-party chief of the U.S. Sanitary Mission in Haiti. Edwin retired in Tempe, Ariz.

1937

Walter F. Breuer, CE, died April 2, 1994. At MSM, he was a member of Phi Kappa Phi, Tau Beta Pi and the Independents. He was awarded junior membership into the Kansas City section of the A.S.C.E. for an outstanding student paper written in his senior year, and he graduated with first honors. Walt worked for the Missouri State Highway Department and then joined the U.S. Army Corps of Engineers in Omaha, Neb., where he worked until his retirement. He lived in California.

Clarence H. Harris, CE, died Sept. 22, 1992. At MSM, he was a member of A.S.C.E. and the Independents. He worked in engineering for over 30 years. In the Air Force, he was regional civil engineer, based in Omaha, Neb. He also worked with J.A. Jones Construction Co. in El Salvador. Clarence retired in Omaha with his wife, Chita.

Glen A. Harwell, CE, died Dec. 18, 1992. At MSM, he served as president of Sigma Pi and was a member of A.S.C.E. and the Interfraternity Council. He worked for the Missouri Department of Health for over 40 years until his retirement. Glen lived in Springfield, Mo., with his wife, Maxine.

Col. Samuel S. Post, MetE, died April 13, 1994. At MSM, he was a member of Tau Beta Pi and a cadet officer in the Army ROTC, winning the Bronze Star Award. After retiring from the U.S. Army in 1966, he worked for Sperry Rand at the Louisiana Ordnance Plant. He and Althea returned to Missouri in 1968, living in Creve Couer and later moving to Belton, Mo., in 1986.

1938

Donald R. Jaenecke, ME, died May 13, 1994. At MSM, he was a member of Tau Beta Pi and Blue Key. He served as president of the Engineers Club for two years and received the A.S.M.E. award for outstanding contributions as president his senior year. He retired from Christie Electric after several years with the McColpin-Christie Corp. He lived in California with his wife, May.

Howard W. Mollet, ME, died Nov. 27, 1990. At MSM, he was a member of A.S.M.E. and ROTC and was a student assistant in the mechanical engineering department. He worked for Jos. E. Seagram and Sons for ten years before moving to Atomic International in California. Howard retired in Claremont, Calif., with his wife, Mary.

Hueston M. Smith, EE, ProfEE'82, died March 2, 1994. At MSM, he was president of S.A.M.E., president of A.I.E.E., president of the ROTC Officers Club and a member of the varsity track team, the St. Pat's Board and the Rifle Team. He was a veteran of World War II, retiring from the Army Corps of Engineers as a colonel in 1963, after receiving the Bronze Star and a Presidential Unit Citation. Hueston also served in the Army Reserves for 10 years. During his business career, Hueston founded Hueston M. Smith and Associates, an engineering consulting firm. He retired as president of the firm in 1989. He was a life member of the MSM-UMR Alumni Association and was made an honorary alumnus of the UMR Academy of Electrical Engineers in 1993. He lived in St. Louis, Mo., with his wife, Edith.

1942

Charles T. Morris, ME, died May 14, 1994. At MSM, he was a member of the varsity swimming team and A.S.M.E. He served as vice president of the Shamrock Club and won an award for intramural boxing. Charles worked for the Monsanto Co. for over 35 years, retiring to Des Peres, Mo., with his wife, Jacqueline.

1943

Jack L. Shafer Jr., ME, died March 22, 1994. At MSM, he was Sigma Nu commander and a member of S.A.M.E. He worked as a sales manager for Bethlehem Steel-Supply in Oklahoma for over 30 years. He retired as sales manager for JW Operating Co. and lived in Tulsa, Okla., with his wife, Elizabeth.

1944

Raymond J. Frericks died Oct. 18, 1993. At MSM, he was a member of Sigma Pi. Raymond was founder and president of Frericks Engineers Inc. He lived in Huntington Beach, Calif., with his wife, Julia.

Vernon J. Pingel, MetE, died in 1991. At MSM, he was an honor student and a member of the Shamrock Club, A.I.M.M.E., Tau Beta Pi and A.S.M. He worked in the metallurgical engineering field for many years, founding V.J. Pingel Co., a consulting firm, in 1984. Vernon lived in Arlington Heights, Ill., with his wife, Elaine.

William L. Shivelbine, ChE, MSChE'47, died in 1992. At MSM, he was a member of Sigma Pi, the Interfraternity Council and Alpha Chi Sigma and was a student assistant in the chemical engineering department. He worked as an engineer for six years and then became co-owner of Shivelbine Music Store Inc. in Cape Girardeau, Mo., where he made his home.

1945

Walter G. Weber, ChE, died in 1991. At MSM, he was president of Pi Kappa Alpha and a member of Student Council. He was retired and lived in St. Louis, Mo.

1947

Melvin F. Kallmeyer, ME, died Jan. 4, 1991. At MSM, he served as Student Council president and as a student assistant in the mechanical engineering department, and he was a member of Blue Key, Tech Club, A.S.M.E., Theta Tau and S.A.M.E. Melvin retired from McDonnell Douglas Corp. after 20 years and lived in Chesterfield, Mo., with his wife, Natalie.

1949

Donald G. DeBolt, EE, ProfEE'70, died May 29, 1994. At MSM, he was a member of Sigma Nu and A.I.E.E. He was awarded the Alumni Association Service Award in 1982 and was a member of the UMR Academy of Electrical Engineers. He served UMR as an admissions ambassador and as his class coordinator. He founded D.G. DeBolt Co. in Dallas, Texas, and later worked for Bridges Electric Co. He lived in Arkansas with his wife, Mary Lou.

Donald E. Eason, EE, died Sept. 29, 1993. At MSM, he was a member of A.I.E.E., Alpha Phi Omega, the *Miner* board, Student Council and the Wesley Foundation. He worked for McDonnell Douglas Corp. for over 30 years and lived in Kirkwood, Mo., with his wife, Florence.

William L. Mason, EE, died April 19, 1994. At MSM, he was a member of Lambda Chi Alpha. He worked in the aircraft industry for most of his career, retiring from Rockwell International. He lived in Fullerton, Calif. (Submitted by Chuck Remington, ME'49)

Joseph W. Rittenhouse, MSEE, ProfEE'69, died Feb. 12, 1994. He earned his BSEE from Purdue University in 1939. After serving in World War II, he earned his master's degree from MSM and became an associate professor of electrical engineering, teaching at MSM until 1954. He joined a division of Joslyn Manufacturing & Supply Co. in 1954, rising through several positions to become chairman and CEO in 1973. He co-authored the book, *Electric Power Transmission*, and was a member and leader of several engineering societies. Joe received an Alumni Achievement Award from in 1982. He retired in 1991 and lived in Barrington, Ill., with his wife, Jane.

Robert B. Shroyer, CerE, has died. At MSM, he was a member of the golf team, Tau Kappa Epsilon and A.C.S. He was a supporter of UMR athletics. He spent most of his career working at the University of California-Lawrence Livermore Lab as a mechanical engineer.

Gene A. Tyrer, ChE, died July 27, 1992. At MSM, he was a member of Lamba Chi Alpha, the Missouri Academy of Science, the *Miner* board, Alpha Chi Sigma, the St. Pat's Board and Phi Kappa Phi. He worked for Stauffer Chemical Co. for many years, moving to Dexter Corp. and then to the Gary Wheaton Co., where he worked until his death. Gene lived in Elburn, Ill., with his wife, Sharon.

ALUMNI NOTES

1950

Kenneth R. Bradley, PetE, died Aug. 23, 1993. At MSM, he was a member of Lambda Chi Alpha. He worked for Lincoln Engineering Co., a division of McNeil Corp., for over 20 years, retiring as district sales manager in St. Louis. Kenneth lived in Danvers, Ill., with his wife, Camille.

Karl K. Breit, ME, died Feb. 4, 1993. At MSM, he was a member of Sigma Phi Epsilon and A.S.M.E. He worked as vice president of the Camis Corp. until his retirement. Karl lived in Lansdale, Pa., with his wife, Ellanore.

Thomas H. Weidman, MinE, died April 15, 1994. He was a U.S. Navy veteran of World War II. He founded two companies during his career in the mining industry, ultimately retiring in 1989 from Explo-Midwest Inc., a subsidiary of Atlas Powder in Joplin, Mo. He moved to Oklahoma, where he was a professional engineer, and then returned to Neosho, Mo., where he and his wife, Janet, lived for the rest of his retirement. (Submitted by Edward L. Johnson, GGph'50)

1951

Edward W. Cawthorne, MetE, died Nov. 19, 1993. At MSM, he was a member of Tau Beta Pi and A.I.M.E. He earned the Phi Kappa Phi Book Plate Award and the Gold Key Award, and he received first honors at graduation. He worked for Battelle Memorial Institute in Columbus, Ohio, until his retirement. Edward lived with his wife, Mary, in Canyon Lake, Calif.

Harold M. Hilburn, GGph, died Nov. 21, 1993. At MSM, he was a charter member of Sigma Gamma Epsilon and was a member of A.I.M.E., the C.L. Dake Geological Society and the Spelunkers Club. He worked as an industrial engineer with the U.S. Air Force until his retirement. Harold lived in Roy, Utah, with his wife, Helen.

Richard P. Ketter, MinE, ProfEMin'70, died Jan. 10, 1994. At MSM, he was a member of A.I.M.E. He worked for 30 years at Bethlehem Steel in Pennsylvania, with several years as general manager of technical services. Richard retired to Naples, Fla., where he lived with his wife, Gaby.

Richard A. Thompson, EE, died in July 1991. At MSM, he was a member of the Tech Club and the Interfraternity Council and was a student assistant in the electrical engineering department. Richard and **Frank Benavides**, CE'70, founded Penta Engineering Corp. in 1986. Richard worked and lived in St. Louis, Mo.

1953

John H. Dickerman, EE, died March 10, 1994. At MSM, he was a member of Tau Beta Pi, Eta Kappa Nu and A.I.E.E. He received the Phi Kappa Phi Book Plate Award and the Gold Key Award. He worked for Bell Labs in New York, served in the U.S. Army and later was employed at Motorola in Arizona and Hughes Aircraft in California. He retired from Rockwell International in 1990 after 21 years as a senior design engineer. John lived in Hacienda Heights, Calif., with his wife, Pat.

1956

Norman D. Stephenson, CE, died Aug. 24, 1993. At MSM, he was a member of Lambda Chi, A.S.C.E. and Tau Beta Pi. He worked for McDonnell Douglas Aircraft for many years, retiring as principal technical specialist. He lived in St. Louis, Mo. (Submitted by Bennie E. Stephenson, CE'53)

1957

Dr. Tatsuhiko Ejima, MSMetE, PhDMetE'59, died March 26, 1994. He spent two years in teaching and research at the Carnegie Institute before returning to Japan in 1961 to teach at Tohoku University. He was the professor of electrometallurgy in the department of metallurgy at Tohoku University from 1970 until his retirement in 1989. He was honored as a professor emeritus of Tohoku University and lived in Sendai, Japan, with his wife, Shinko.

1959

Ronald E. Sander, ME, died Feb. 20, 1994. At MSM, he was a member of Sigma Phi Epsilon, A.S.M.E., S.A.E. and the *Missouri Miner* staff. He was an engineer with Eldec Co. and lived in Everett, Wash., with his wife, Marlea.

1961

Lt. Col. Basil E. McCarthy, CE, died July 8, 1993. At MSM, he was a member of Chi Epsilon and A.S.C.E. He retired from the U.S. Army and worked as an engineer with the Manville Corp. He lived with his wife, Joan, in Littleton, Colo.

Joseph F. Waddell, CE, died Feb. 9, 1992. At MSM, he was a member of A.S.C.E. and the Newman Club. He worked for the U.S. Army Corps of Engineers for over 20 years, retiring to his home in Haskell, Okla.

1965

John H. Kenworthy, CE, died in 1989. At UMR, he was a member of A.S.C.E. and the Army Student Officer Association. He served as a major in the U.S. Army and was a deputy district engineer in the U.S. Army Corps of Engineers. He worked as a civil engineer for C.T. Male and Associates until his retirement. John lived in New York with his wife.

1966

David F. Reed, ME, died March 5, 1993. At UMR, he was a member of Tau Beta Pi, Phi Kappa Phi and Pi Tau Sigma. He was a research engineer with Borg-Warner Corp. for many years before going to work for Hallmark Cards Inc. in Kansas City, where he was acting director of graphic arts technical services. David lived with his wife, Almyra, and their children in Kansas City, Mo.

1967

Jong-Tsong Chen, MSCE, died May 12, 1991. He earned his bachelor's degree from Taiwan Cheng Kung University in Taiwan. He worked for engineering consulting firms in Kansas City and Los Angeles before going to work for Bechtel Power Corp. He lived in Santa Ana, Calif., with his wife.

1969

Gregory M. Schatz, CE, died Sept. 28, 1992. At UMR, he was a member of the Army ROTC, Independents, Tech Club and A.S.C.E. He worked as assistant civil engineer in charge of bridge construction at the New York Department of Transportation, where he had worked for 20 years. He lived in New York with his wife, Diane.

1971

Henry C. Watson III, MSCE, died Nov. 2, 1992. He served as a major in the U.S. Army. He was a professional engineer in Virginia and worked as public utilities administrator for the City of Virginia Beach, where he made his home.

1972

Donald R. Vasterling, MSEMgt, died March 21, 1987. He earned his master's degree from UMR's Graduate Engineering Center in St. Louis, and he worked as process control superviser for NL Industries for many years. Donald lived in St. Louis with his wife, Carolyn.

1974

Charles P. Kirk Sr., CE, died May 2, 1994. At UMR, he was a member of Kappa Kappa Psi, Theta Xi and the UMR Band. He retired as a representative of the New York Life Insurance Co. and lived in Baton Rouge, La., with his wife, Phyllis.

1976

Dixy Lee Ray, HonDSci, died Jan. 5, 1994. She served a term as governor of the State of Washington and as assistant secretary of state in Washington, D.C. She was an author, who was made an honorary alumnus after giving the key address at the 1976 UMR graduation ceremonies. She lived in Fox Island, Wash.

1991

Dr. Susan H. Burgess, PhDEMgt, died in September 1993. She earned her undergraduate degree from Princeton University and did some engineering consulting before joining the UMR engineering management department. Susan's education at UMR was interrupted by cancer. After chemotherapy and surgery, Susan returned to complete her degree and to teach as a graduate assistant at UMR. She worked for Northwest Airlines in Minneapolis, Minn., until the cancer recurred in 1992. Susan lived in New York. (Information provided by Dr. Bill Omurtag, engineering management)

Relatively Speaking

Edith Fort Smith has a lot of connections to UMR. Relatives of Edith that have worked or studied at MSM or UMR span a period of 60 years. Edith's father, Rowe Fort, was a long-time Rolla chief of police. **Walker E. Case**, EE'22, married Edith's Aunt Anna in Rolla in the 1920s. Edith herself worked for the University for 40 years in the business office and in the Chancellor's office. She married **Hueston M. Smith**, EE'38, ProfEE'82, who, during the Depression, founded the Engineers Club, an eating club which was in operation on campus until the mid 1980s. Edith's brother, **George E. Fort**, MinE'40, ProfPetE'67, also attended MSM.

Besides her immediate family, Edith has eight cousins who attended MSM or UMR. Her cousin, Elizabeth "Bid" Long, was St. Pat's Queen in 1929 and was married to **Harry S. Pence**, MinE'23, ProfEMin'35, who was later president of the MSM-UMR Alumni Association from 1953 to 1956. Edith's cousin, Dorothy Fort, was also St. Pat's Queen in 1935 and was married to **Jim C. Meacham**, MinE'34. Other cousins who attended the University are **John S. Sabine**, MSChem'33; **Ellsworth Fort**, PetE'34; **E. Clarke Romine**, ChE'40; **Clarence A. Isbell Jr.**, MetE'50, MSEMgt'72; **Laura C. Eddleman-Davenport**, Psyc'72, and **Richard Isbell**, CE'80. Edith lives in St. Louis.

What's New with U?

We admit it: We're nosy. We would like to share your news about your professional accomplishments with your classmates, including job change, promotion or retirement; community and volunteer activities; recent marriage or addition to your family; or any other news you have.

Please include the following information:

Name: _____

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ALUMNI PROFILE

GREAT SCOTT!

By John Kean

Former Miner called to lead South Carolina football program

Former Miner offensive lineman **Brad Scott** was instrumental in leading the Florida State University Seminoles to a national championship in Division I football last year. Now, as head coach for the University of South Carolina Gamecocks, Scott hopes to do the same for his new team.

Success has eluded South Carolina's football program throughout its 102 years. The Gamecocks have never won a bowl game, and they compete in one of the country's toughest football conferences. These facts were not lost on Scott as he prepared for his first season as a collegiate head coach—and as the first former Miner player to serve as a head coach for a Division I-A football team. In fact, he sees the new job in Columbia, S.C., as a great personal challenge.

"It was great to win the national championship at Florida State," says Scott, who was an All-MIAA lineman for the Miners during a playing career that ran from 1972 to 1975. "But it would also be great to be the first coach in South Carolina history to win a bowl game."

Scott may be the right man for the job. History is certainly on his side. Since 1985, his first year as a full-time assistant at Florida State, the Seminoles are 9-0 in bowl games. And in that time, Scott has helped bring the FSU program to the fore nationally.

A native of Arcadia, Fla., Scott knew all about Florida football. He also knew all about UMR through his uncle, Charles Scott, who lives in Rolla and works at the U. S. Geological Survey.

"My uncle always told me about what a strong institution UMR was in engineering, and I had a strong interest in engineering while in high school," Scott says. "I didn't receive a lot of interest from the Florida schools, so I began looking at Division I-AA and II." After a summer visit with Charlie Finley, UMR's head football coach at that time, Scott enrolled with plans to major in petroleum engineering.

For Scott, the competition of football was an escape from the rigors of studying and a path to new friendships. "It was such a great experience, and the thing I remember the most are the great relationships with the coaches and players," he says. "It was a close relationship between the staff and players, and that meant something to me."

One of Scott's closest friendships today is with Miner teammate **Rick Petri** (EMgt'76), who now is the defensive line coach at the University of Miami (Fla.).

Scott switched his major to life sciences while at UMR and in 1979 earned a bachelor's degree in science education. He started coaching as a high school assistant in Florida that year.

By 1983, after serving for a year as a head coach at the high school level, Scott went to Florida State as a graduate assistant. There he completed his master's degree in athletic administration and became a full-time assistant under FSU's Bobby Bowden in 1985.

He was the Seminoles' recruiting coordinator during his first five years, then served as offensive coordinator until being picked to lead South Carolina's football program on Dec. 7. Scott remained with the Seminoles through the Orange Bowl game. which resulted in an 18-16 win over Nebraska—and secured that elusive national title for Bowden.

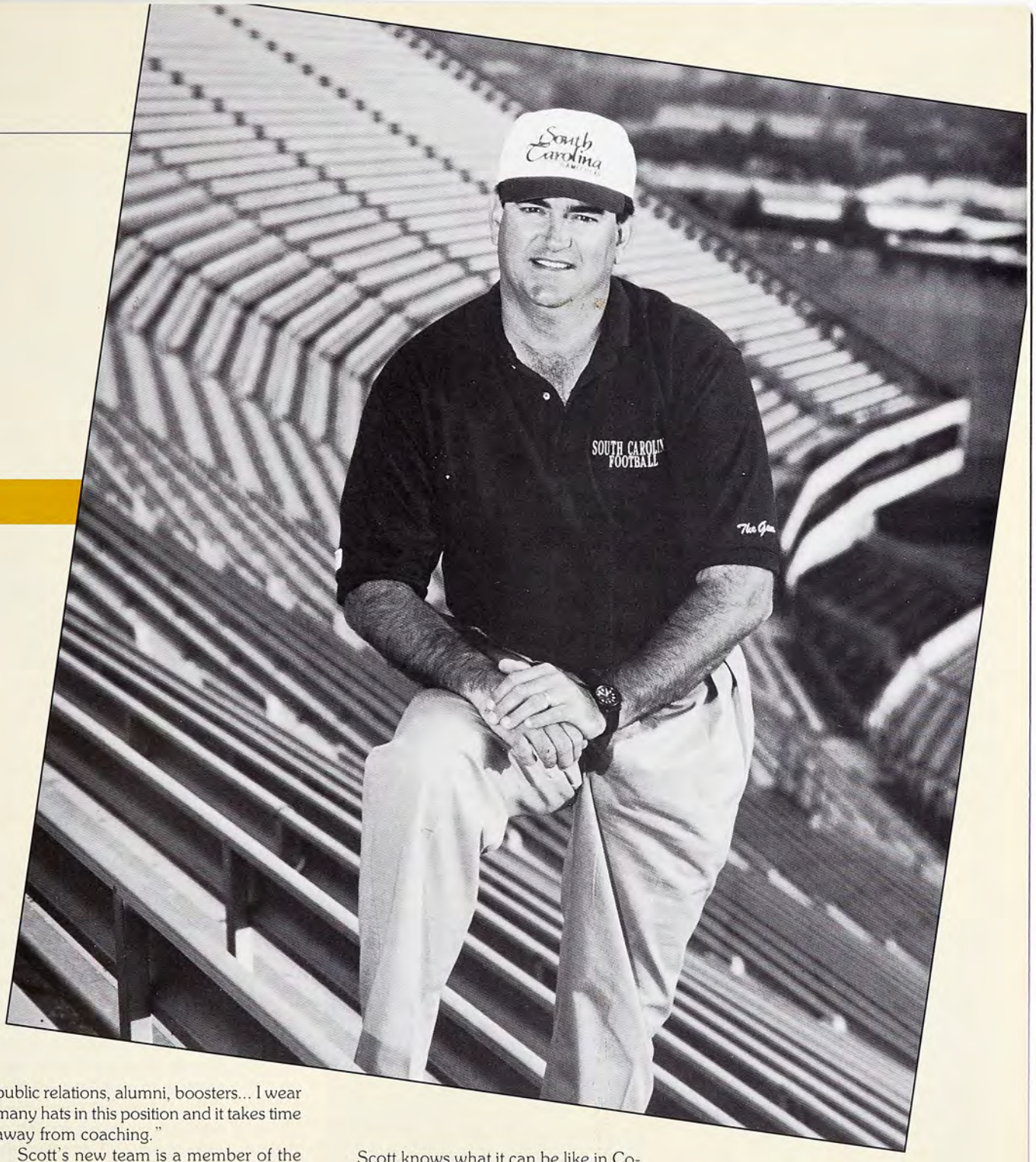
"I would not have taken this job if I couldn't finish the work at Florida State, and South Carolina was in agreement to that," Scott says. "Winning the national championship was the last piece of the puzzle, because we had been so close for so long at Florida State and we wanted to win it badly for Coach Bowden." Scott also believes his affiliation with that winning Florida State team will aid in his recruiting for the South Carolina program.

Juggling the two jobs proved more difficult than Scott expected. "I was on the job here at South Carolina for one week, then gone for three," he says. He would coach for Florida State in the mornings, plan practices for the next day, and then work for South Carolina at night.

The difference between FSU and South Carolina is significant. Last fall, Scott was heading one of college football's most explosive offensive units, led by Heisman Trophy winner Charlie Ward. Today, he is trying to rebuild a Gamecock team that was 4-7 in 1993.

And as a first-time collegiate head coach, Scott is viewing his responsibilities from a new perspective.

"I am seeing this with a different set of eyes," he says. "Last year, I was focusing strictly on the offense, but now I am looking at all facets of the game. And not just the x's and o's, but the administrative responsibilities, dealing with the media,



public relations, alumni, boosters... I wear many hats in this position and it takes time away from coaching."

Scott's new team is a member of the Southeastern Conference, arguably the best football conference in the nation.

"Nothing comes easy in this conference," Scott says. "There are no weak links. We're going to have to compete at our best, but we have the talent to do that. We want to build a foundation for success like we did at Florida State. The facilities and following are in place. This can be one of the best jobs in the country."

Scott knows what it can be like in Columbia if the Gamecocks are successful. A decade ago, fans at Columbia were saying of their stadium, "If it ain't swaying, then we ain't playing." In late 1984, Florida State visited Columbia and the stadium was literally rocking that day as the undefeated Gamecocks won 38-26.

"I really felt it during that game," recalls Scott, who was then an FSU graduate assistant. "I remember being in the visitor's locker room, and I thought it was going to fall on top of us."

Even last season, as the Gamecocks struggled, an average of 68,000 fans showed up for each South Carolina home game. Scott hopes for even larger crowds in a stadium that again will sway to the rhythm of a winning football program. ■

On Thursday, June 23, 1994, the **North Alabama Section** got together at the Holiday Inn in Huntsville, Ala. An hour or so of socializing preceded the dinner, which also included much socializing. After dinner, Doug Morris '89 spoke a bit about the previous year's activities and fielded comments about changes that people would like to see. Gene Barnes '50 mentioned that there should be more advanced notice of meetings. This sounded reasonable, so the next two meetings were planned. The next meeting will be held Sept. 17 at Gene and Pat Barnes' place on Guntersville Lake. The following meeting will be held Dec. 8 at the Heritage Club in Huntsville. Steve Stearns '75 thought that meeting reminders closer to the date would be a good idea, and Karen Bryan '81 volunteered to put together a telephone tree to keep everyone in touch.

New officers were elected as follows: John Dunbar '84, president; Darrell Dixon '90, '92, secretary/treasurer. A good time was had by all and we are looking forward to the next gathering at Gene's and Pat's in September. **(Submitted by John Dunbar '84)**

Attending: Gene '50 and Pat Barnes; Don Jones '64; John '64, '66, '69 and Carolyn Glaese; Steve Stearns '75; Karen (McCoy) '81 and Chuck Bryan; John Dunbar '84; Tim Hudwalker '88; Doug Morris '89; Darrell Dixon '90, '92.

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The **Ark-La-Tex Section** held their spring meeting April 30, 1994, at the Barksdale Air Force Base Officers' Club. The meeting was preceded by a social get-together at the home of hosts John '39 and Eilyeen Livingston. The delicious meal of prime rib and chicken cordon bleu was followed by a business meeting. There were 31 alumni and guests present. This being a rather good turnout for us, $5 in dues were collected from the alumni present.

Our special guests were Darren Kimmell, his parents and his sister. Darren is our section scholarship winner. He lives in Zachary, La., and will study mechanical engineering at UMR this fall. President John Moscari '51 recognized Beth Cochran for chairing the scholarship committee and congratulated Phil Browning '48 on receiving the Guiding Light Alumni Award. The officers will meet to decide when and where the next meeting will be held. **(Submitted by Walt Mulyca '65)**

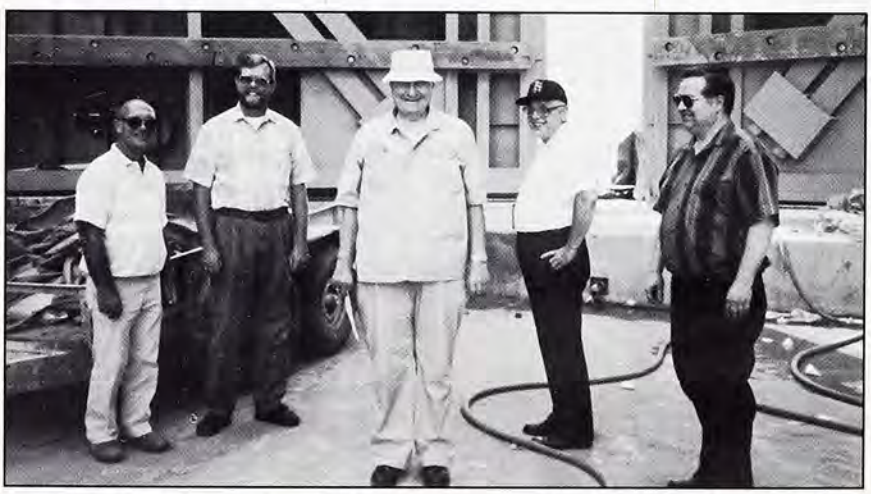
Attending: Don '75, '88 and Ann Simpson; Edward Casleton '92; Susan Bruns '91, '93; Louise Patton; Phil '48 and Ardella Browning; Walter '34 and Helen Bruening; Elmond Claridge '39, '41; Basil '39 and Clydelle Compton; Charles and Wilma Johnson; Glenn, Beth, Darren and Lauren Kimmell; John '39 and Eilyeen Livingston; Andrew '58 and Collette Matias; John '51 and Loretta Moscari; Jerry '82 and Tammy Poland; Gene '62, '77, '92 and Judy Rand; Gerald '28 and Leona Roberts; Walt Mulyca '65.

The summer meeting of the **Ark-La-Tex Section** was held July 16, 1994. John '39 and Eilyeen Livingston held a hospitality hour for us at their home. We then ventured forth to the U.S. Army Corps of engineers Lock and Dam 4 on the Red River near Coushatta, La. Don Simpson '75, '88, resident engineer, presented a slide show on the construction of the Lock and Dam project which is about to be flooded. After a tour of the site we returned to the Livingstons', refreshed ourselves and headed for our dinner meeting at the Bamboo Restaurant in Shreveport.

Don Brackhahn, executive vice president of the Alumni Association, gave us a very interesting update on student activities. He presented Walter Bruening '34 with a copy of *A History of MSM/UMR* and Don Simpson '75, '88 and John Moscari '51 with a silver Miner.

The fall meeting will be held in the Longview, Texas, area. **(Submitted by Walt Mulyca '65)**

Attending: Don and Nancy Brackhahn; Walter '34 and Helen Bruening; Basil '39 and Clydelle Compton; John '39 and Eilyeen Livingston; John '51 and Loretta Moscari; Walt '65 and Anne Mulyca; Denver '52 and Shirley Patton; Louise Patton; Gerald '28 and Leona Roberts; Donald '75, '88 and Ann Simpson.



Standing by the lock on the bay: Ark-La-Tex section members visit the Red River Lock & Dam No. 4 near Shreveport, La. Left to right (unknown Red River employee), Don Simpson '75; John Livingston, '39; Don Brackhahn and Walt Mulyca, '65.

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The **Central Ozark Section** met June 4, 1994, at the Finer Shelter in Meramec Springs Park, St. James, Mo. Fifty-one alumni, family members and friends were present for the event. The entertainment of the afternoon was the pig roast engineered by chefs Dennis McGee '69 and Bob Kennedy '69. Assisting with catering were Dick Elgin '74, '76 and Randy Verkamp '72. A short business meeting was held before the food was served. President Merrill Stevens '83, '88 announced upcoming events, including a dinner-theater meeting for summer, the annual shrimp feed in early September, Homecoming in October and a champagne brunch in early December. **(Submitted by Dixie Finley '68)**

Attending: Dirk Ellis '85; Randy and Ben Verkamp '72; Merrill Stevens '83, '88; Melanie Robertson '93; Jim Mitchell '42; Rick Frederick; Bob '37 and Sybil Lange; Glenn '79, Barb '81, Matt and Nathan Horter; Tom '58, '68 and Grette '74 Herrick; Dixie '68

and Charles Finley; Harold '66 and Joyce Fiebelman; Betty Eyberg; Harland Ellis '60; Dick '74, '76 and Robert Elgin; Harold '84, Diane '84, Brina and Alerica Crouch; Vi Springer; Bill Collins '50, '51, '91; Linda Bramel '89; Jerry '59, '62 and Shirley Bayless; Jennie Bayless '89; Bill '53 and Pat Lindgren; Bob Wolf '51, '52; John and Mieko Tyler; Floyd Cook; John '51 and Patty Smith; Don Myers '61, '64; Jeff Mitchell '94; Dennis McGee '69.

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The **Colorado Section** had its summer picnic July 16, 1994, at the home of Henry '71 and Irene Sandhaus. During a wild Colorado afternoon of lightning and a little rain, the alumni enjoyed a potluck dinner with Hank's homemade ice cream. Typical Miner discussions were enjoyed by the attendees and some ideas were brought up for the fall social outing. **(Submitted by Randy Kerns '74)**

Attending: Gene '51 and Lee Lindsey; Jerry '53, '54 and Virginia Plunkett; Marshall '76 and Barb Shackelford; Dennis Thebeau '81; Jack '42 and Margaret Zoller; Ray Seggelke '93; Max '61, '64 and Marta Light; Joel '86, '94 and Ann '84 Brand; R. Lary '58 and Carna Miller; Randy '74 and Cherie Kerns and family; Hank '71 and Irene Sandhaus; plus a few others that we didn't get registered.

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The **Georgia Section** held a dinner and meeting at the Northwest Atlanta Hilton Hotel April 30, 1994. Twenty-one alumni and spouses attended. Before dinner, the slate of proposed section officers met with Don Brackhahn, Alumni Association executive vice president, to discuss organization of the section, details of the section scholarship program and the idea of meeting sites throughout Georgia for sub-section meetings. The sub-sections would allow alumni from different regions within the state to participate. After dinner, George Leck '61 opened the meeting, announced our purpose of reorganizing the Georgia Section and introduced Dick Kahl '63, '69, who presented the proposed slate of officers. The Georgia Section officers for 1994 are George Leck, president; Connelly Sanders '53, president-elect; David Ziegler '85, '87, secretary/treasurer; Dick Kahl and Kim Winkeler '88, members at large.

After the meeting, Don Brackhahn presented a slide show of UMR, past and present. A drawing was held for door prizes; various and sundry UMR memorabilia were awarded, and the meeting was adjourned. **(Submitted by David Ziegler '85, '87)**

Attending: Bob '79 and Tamara Arnold; Lee '50, '92, '93 and Mary Aston; Mark '83, '89 and Margie Davis; Richard Kahl '63, '69; George '61 and Barbara Leck; Ed '62, '70 and Bev Perrey; Larry Roddy '76; Connelly Sanders '53; Curt Schroeder '88, '91; Ann Shao '91; David Ziegler '85, '87; Mark Atkins '85; James '81 and Kim Roberts; Kim Winkeler '88.

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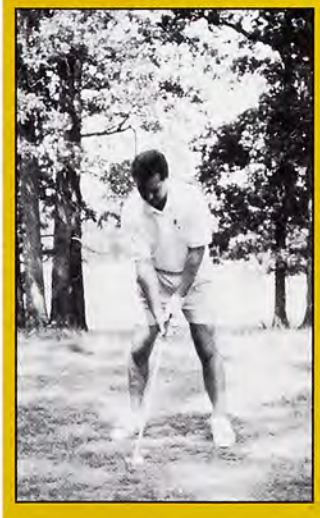
The **Heartland Section** met for lunch, golf and sightseeing at the Rend Lake Golf Course and Restaurant June 25, 1994. President Gene Edwards '53 conducted a business meeting to appoint committees and discuss future goals. Vice president Frank Conci '54 reported on the recipient of the Heartland Section scholarship for 1994 and gave a progress report on our other two recipients. After a discussion session, door prizes were awarded. A floral centerpiece, made and donated by JoAnn Burgett, went to Mike Hammond '62. A crocheted wreath, made and donated by Clemie Stewart, went to Elizabeth Wilson, and Miner booster caps went to Bill Cooke and George Eadie '49.

After lunch, 12 persons braved the weather to play in a nine-hole golf tournament. Winners were as

♣ Section Fun in St. Louis



Enjoying the McDonnell Douglas/St. Louis Section Night at the Ballpark are [l-r] Joe Corce '74; Paul Segura '88; Lynn Segura, '87; and John Eash '79.

At the St. Louis Golf Tournament Phil Jozwiak, '66 (left) joins Milt Murry, '64 (second from right) and Jim and Tom Hoffman (both class of '83). At left Len Kirberg, '66 tees up.

Alumni Football Team Gets Down and Dirty

The alumni football team won its first victory against the football Miners at the **Annual Alumni Football Game** held Saturday, April 30, 1994, at 1:30 p.m. The alumni team beat the Miners seven to six.

The alumni football team is made up of former Miner football players. According to UMR head football coach Jim Anderson, all former athletes are invited and encouraged to attend the annual game. "And everyone should come back, even if you think you're too old," Coach Anderson said.

The 1994 alumni team had 36 players, including Mike Swinford '91, who, according to Coach Anderson, has been the star of the alumni team for three years in a row. The annual game is preceded on Friday by an alumni luncheon and an annual golf tournament. A reception is held Friday evening and a post-game dinner is held for alumni on Saturday. Any former Miners who are interested in next year's game should call the UMR Athletic Office.

Members of the alumni team included: Mark Wojtal '92; Michael Widman '90; Kevin Riggs '91; E. Eugene Ricker '67; Bill Peach '75; Rob Noble '92; Brett Goodman '93; Mark Diamond '92; John Clark '88; A. Scott Adams '93; Mike Swinford '91; Jerry Hirlinger '86.

follows: low ladies score, JoAnn Burgett; low gross, Gene Edwards; low handicap, Bill Cooke; closest to pin number four, Austin Story '68; least number of putts, George Eadie; most sevens, Henry Ehrlinger and Ben Bailey '50.

The fall meeting is being planned for southeast Missouri. **(Submitted by Bill Stewart '54)**

Attending: Jason Bagwell '87 and fiance Carla Green; Allen "Ben" Bailey '50; Carroll "Punch" '54 and Jan "Poo" Bennett; Max '54 and JoAnn Burgett; Frank '54 and Leona Conci; J. Bill Cooke; Gene Edwards '53; George Eadie '49 and guest Henry Ehrlinger; Don '66 and Jenny Fuller; Mike Hammond '62; Lester '51 and Joann Holcomb; Jack Licata '52; Bill '54 and Clemie Stewart; Austin Story '68; Carl '62 and Elizabeth Wilson.

On June 12, 1994, a group of alums made up of present officers, past officers and others who had recently expressed an interest in participating in the activities of the section met in the home of Wayne '58 and Betty Andreas for a **Houston Section** planning meeting.

Items discussed included upcoming meetings and the prospective student reception. Also, we are looking into various possibilities for a fall meeting. One item discussed was an Octoberfest theme, but the subject is still open. Past president Kirk Lawson '85, '87 will head the nominating committee for next year's officer elections. He will recruit his committee members.

During the meeting, spouses, children, grandchildren and friends enjoyed the pool and the backyard. When the word was received that the hamburgers had been put on the grill, the business meeting was adjourned and the workers joined the party. **(Submitted by Wayne Andreas '58)**

Attending: Rex Alford '40, '74; Wayne '58 and Betty Andreas; Robert Baker '59 and Karen; Martha Hilton '91; Dan '73, Delores '75, Travis and Victory Hinkle; Cecil Hollingsworth '50; W. Alan Hopkins '89, '93; Curt '73, '80, Mary Beth, Catherine and Joseph Killinger; Wayne '74, Rebecca and Sean Kotter; Kirk Lawson '85, '87; Jim '43 and Lou Paul and grandchildren Matthew and Layne; Nicole Talbot '77.

AROUND THE COUNTRY

UPCOMING MINER ALUMNI EVENTS

	WHEN	EVENT	WHO DO I CONTACT?
OCT.	3	TMS Alumni Reception, Rosemont, IL	Alumni Office, 314-341-4145
	5	St. Louis Section Men's & Women's Soccer at UMSL	Alumni Office, 314-341-4145
	7-8	HOMECOMING	Alumni Office, 314-341-4145
	18	St. Louis Fall Meeting & Reception	Ron Jagels '86 314-531-4321 (B)
	22	Parents Day	Alumni Office, 314-341-4145
NOV.	17	Lincolnland Section Dinner, Springfield, IL	Ed Midden '69, 217-523-0811 (B)
	18	St. Louis Riverboat Casino Night	Ron Jagels '86 314-531-4321 (B)
DEC.	8	Northern Alabama Section, Huntsville, AL	John Dunbar '84, 205-828-5874 (H)
	17	COMMENCEMENT	
	30	Phoenix Alumni Reception, Women's Basketball Team	Alumni Office, 314-341-4145
JAN.	14	St. Louis Section UMSL Basketball Game Reception	Ron Jagels '86 314-531-4321 (B)

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The **Miner Music Section** held a meeting April 30, 1994, in the University Center-East on the UMR campus. There were fifteen alumni and guests in attendance. Members discussed the section scholarship, Joe Miner wallpaper, a section history book and ordering band jackets. The traditional dinner at Alex's Pizza in Rolla was held at 5 p.m. that evening. Some members also enjoyed the UMR band concert in Castleman Hall at 3 p.m. on Sunday. **(Submitted by Debbie Hunke '90)**

Attending: Nicole Talbot '77; David T. McCown '93; Gary '76 and Nancy (Brown) '80 Fischer; Randall Skaggs '89; Debbie Hunke '90; Penny Cutler '91; Cynthia Millangue '91; Joel Kramme; Dr. David Oakley; Lindsay Bagnall '76; Libby Perkins; Tom Rogge '93; Bryan Penning; Jeff Foster.

The **Miner Music Section** met in Rolla for a float trip Saturday, July 16. The trip was a joint venture between the alumni section and the current music students. We all met at Castleman Hall that morning and then piled into a few cars for the drive to Six Crossings, south of Rolla. As we pulled up to the river, the skies opened up and it started to rain! But, we didn't care. We stood out in the rain and waited for it to quit. Before too long the rain did stop and we began our canoe trip on what turned out to be a gorgeous day. We survived the five hour float with only minor injuries--there were big rocks in the river! After the float, we returned to Green Acres Park in Rolla for hot dogs, hamburgers and more socializing. As always the alumni enjoyed visiting with the current students

Our next event will be a picnic for all music students at the beginning of the fall semester. We are still working out the details and will let you know when and where as soon as possible. **(Submitted by Debbie Hunke '90)**

Attending: Dave McCown '93; Jeff Schramm '92; Gary '76 and Nancy (Brown) '80 Fischer; Kevin McCosh '82; Penny Cutler '91; Randy Skaggs '89; Debbie Hunke '90; Tom Rogge '93; Karen Schoor '94; Craig Blair '92; Bev Cohen; Libby Perkins; Mark Eberle; Nancy Lambertson; L.P. Cook; Amy Keaton; Matt Benz; Steve Abraham; Susan Mills; Bryan Penning; Geoff Willmoth; Brent Hedding; Jeff Foster.

ATTENTION ALL SECTIONS
We want your news!

Deadlines for coming issues of the *MSM Alumnus* are as follows:

Winter Issue - November 1

Spring Issue - February 1

Summer Issue - May 1

Keep those reports and pictures coming!

Education: Jim Stewart attended two years at Mineral Area Community College (which his father helped to found) before coming to MSM to finish his degree in chemical engineering in 1934.

Background: The Stewart family has enjoyed a long association with MSM-UMR. Jim's grandmother, Mary Ann Beddoe, attended MSM in 1879-1880, and his mother, Margaret Beulah Fraizer, attended MSM from 1899-1902 before finishing her degree at Cape Girardeau's teacher's college. His brother, Fraizer McVale Stewart, graduated from MSM in 1940, with a degree in mining geology. Jim was president of the minerals, pigments and metals division for Pfizer, Inc. before retiring.

Joan Stewart was born in Oklahoma, and spent part of her life in California and New Hampshire before marrying Jim in 1986.

Gifts to MSM-UMR: The Stewarts set up a charitable remainder trust which will pay them income for life. At the end of the trust life, the remainder will go into the Stewart-Fraizer Scholarship, which Stewart set up in 1988.

Donor Profile

Thomas J. "Jim" and Joan Stewart

Titusville, Florida

Can you fill this chair?

This year the University of Missouri-Rolla has a special opportunity to create a new faculty chair with matching funds from the State of Missouri. The chair below represents a faculty chair, committed to the university and the mining engineering department last year in the name of former Peabody Coal Co. president and CEO Robert Quenon. A faculty chair carries the prestige with added financial incentives for compensation and research support to attract top faculty to UM-Rolla. A gift of $1.1 million to UM-Rolla will be matched by the state to create a total chair fund of $2.2 million.

For more information call 1-800-392-4112.

ROW YOUR BOAT

The UMR Concrete Canoe team (middle) races toward the finish line in last spring's regional concrete canoe race on Little Prairie Lake near Rolla. The canoe team is one of many student teams that teaches students lessons about teamwork and real-life problems outside the classroom. Story on page 10.

MSM ALUMNUS

MSM-UMR Alumni Association
Castleman Hall
University of Missouri-Rolla
Rolla, MO 65401-0249

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